THE UNITED STATES NAVY

INSTALLATION RESTORATION PROGRAM

FINAL

RECORD OF DECISION
FOR
SITES 45, 49, 59, 61, 67, 68, AND 69
SITE WIDE OPERABLE UNIT

ANDERSEN AIR FORCE BASE, GUAM

November 2009

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14. ABSTRACT
This Record of Decision (ROD) presents the rationale for the No Action decision for Installation Restoration Program (IRP) Sites 45, 49, 59, 61, 67, 68, and 69, located in the Site Wide Operable Unit at Andersen AFB, Guam. This ROD summarizes the history, environmental background, extent of contamination, risk screening, public involvement, and rationale for No Action.

15. SUBJECT TERMS
- Andersen AFB
- Installation Restoration Program
- Preliminary Assessment/Site Investigation
- Public Involvement
- Remedial Investigation/Feasibility Study
- Record of Decision

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Acronyms and Abbreviations

AFB	Air Force Base
AFI	Air Force Instruction
APEC	Allied Pacific Environmental Consulting
AR	Administrative Record
bgs	below ground surface
BTV	Background Threshold Value
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CES/CEVR	Civil Engineer Squadron/Civil Engineer Environmental Flight
COPC	contaminant of potential concern
CSM	conceptual site model
DERP	Defense Environmental Restoration Program
EA	EA Engineering, Science, and Technology, Inc.
EBS	Environmental Baseline Survey
EOD	Explosive Ordnance Disposal
°F	degrees Fahrenheit
FFA	Federal Facilities Agreement
FUDS	Formerly Used Defense Sites
Guam EPA	Guam Environmental Protection Agency
ICF	ICF Technology, Inc.
ID	identification
IRP	Installation Restoration Program
µg/kg	micrograms per kilogram
MARBO	Marianas/Bonins Command
MEC	munitions and explosives of concern
MMRP	Military Munitions Response Program
mg/kg	milligrams per kilogram
msl	mean sea level
MSA	Munitions Storage Area
NCP	National Oil and Hazardous Substances Pollution Contingency Plan of 1990
NEPA	National Environmental Policy Act
NFRAP	No Further Response Action Planned

OU	Operable Unit
PAH	polycyclic aromatic hydrocarbon
PA/SI	Preliminary Assessment/Site Inspection
PCE	tetrachloroethene
PRG	Preliminary Remediation Goal
RI	Remedial Investigation
ROD	Record of Decision
SARA	Superfund Amendments and Reauthorization Act of 1986
SVOC	semivolatile organic compound
TAL	Target Analyte List
TCE	trichloroethene
TP	test pit
TPH-DRO	total petroleum hydrocarbons–diesel range organics
TPH-GRO	total petroleum hydrocarbons–gasoline range organics
USAF	United States Air Force
USEPA	United States Environmental Protection Agency
USN	United States Navy
UST	underground storage tank
VOC	volatile organic compound

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1.0 Declaration

1.1 Site Name and Location

Facility Name: Andersen Air Force Base (AFB), Guam
Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Identification (ID) Number: GU6571999519
Operable Unit (OU)/Site: Seven Installation Restoration Program (IRP) sites in the Andersen AFB Site Wide OU:

- Site 45
- Site 49
- Site 59
- Site 61
- Site 67
- Site 68
- Site 69

1.2 Statement of Basis and Purpose

This decision document presents the selected remedies for IRP Sites 45, 49, 59, 61, 67, 68, and 69, located at Andersen AFB, Guam (Figures 1-1 and 1-2). The selected remedies were chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan of 1990 (NCP). This decision is based on the Administrative Record (AR) for these sites, including pertinent IRP documents, correspondence, and material related to the CERCLA investigations and cleanups.

This document is issued by the United States Navy (USN)[1], as the lead agency. The USN is managing remediation of contamination at the Site Wide OU sites listed above in accordance with CERCLA as required by the Defense Environmental Restoration Program (DERP).

[1] The Department of Defense is in the process of realigning installation management functions at Andersen AFB. On October 1, 2009, pursuant to the 2005 Defense Base Closure and Realignment Commission Report, administrative custody of all real property on Andersen AFB and responsibility for installation support functions, including Environmental Restoration Program responsibilities, transferred within the Department of Defense from the Department of the Air Force to the Department of Navy. Title to Andersen AFB real property will remain with the United States and the Air Force will continue to utilize the Base. The Navy will also utilize portions of the Base. In accordance with the April 15, 2008, Department of Defense Environmental Supplemental Guidance for Implementing and Operating a Joint Base, at the time of property transfer the Navy, as the new property manager at the Base, assumed responsibility "for all existing and future environmental permits, requirements, plans, and agreements" at the Base (Ch. 1.1.2) and was required to "honor all existing, previously negotiated Federal Facility Agreements in place." (Ch. 2.17.5 of the Guidance).

In January 2009, the Navy and the Air Force entered into a separate Memorandum of Agreement, which delegated installation support and authority back to the Air Force General who is the Andersen Base Commanding Officer under the authority, control, and direction of the Joint Region Commander, who is a Navy Admiral. This delegation includes the authority to sign Records of Decision. The Andersen Base Commanding Officer and Andersen environmental staff continue to administer the FFA under Navy direction. Both the Air Force and the Navy notified USEPA of the change of administrative responsibility under the FFA (See Appendix B).

The USN and the United States Environmental Protection Agency (USEPA) have jointly selected the remedies and the Guam Environmental Protection Agency (Guam EPA) has concurred with the decision, under the guidelines established in the Federal Facilities Agreement (FFA) signed in February 1993 by representatives of USEPA Region 9, Guam EPA, and the USAF (USEPA et al., 1993).

1.3 Description of Selected Remedy

Based on the results of a previously conducted Preliminary Assessment/Site Inspections (PA/SIs) at Sites 59, 61, 67, and 68; a No Further Response Action Planned (NFRAP) Decision Document for Sites 45 and 69; and a Remedial Investigation (RI) at Site 49, the USN has determined that no further CERCLA remedial action is required at these IRP sites.

1.4 Statutory Determinations

This section describes how the selected remedies satisfy the statutory requirements of CERCLA §121 and the regulatory requirements of the NCP.

Because the soil sample analytical results for Sites 45, 49, 59, 61, 67, 68, and 69 indicate that there are no unacceptable risks to human or the environment, the USN has determined that no CERCLA remedial action is necessary at the sites.

Because there are currently no hazardous substances, pollutants, or contaminants remaining at the sites above levels that would allow for unlimited use and unrestricted access, a five-year review is not required.

Data Certification Checklist

The information included in the Decision Summary section (Section 2) of this ROD is summarized in Table 1-1. Additional information can be found in the AR file for Andersen AFB, which is available for public review at two information repositories that are located at the Robert F. Kennedy Library at the University of Guam and the Nieves M. Flores Memorial Library in Hagåtña.

1.5 Authorizing Signatures

The following signature sheets document the decision by USN and USEPA Region 9 that no remedial action is required for Sites 45, 49, 59, 61, 67, 68, and 69, Site-Wide OU, Andersen AFB, Guam, and the concurrence of Guam EPA in that decision.

This signature sheet documents the USN and AAFB co-selection of No Action as the remedial action in this ROD for Site Wide OU Sites 45, 49, 59, 61, 67, 68, and 69, Andersen AFB, Guam.

JOHN W. DOUCETTE
Brigadier General, USAF
Base Commanding Officer[2]

30 Aug 11
Date

[2] Under Delegation of Authority from Commander Joint Region Marianas. See Footnote [1].

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This signature sheet documents the USEPA Region 9 co-selection of No Action as the remedial action in this ROD for Site Wide OU Sites 45, 49, 59, 61, 67, 68, and 69, Andersen AFB, Guam.

for

ANGELES HERRERA
Acting Assistant Director
Federal Facilities and Site Cleanup Branch
U.S. Environmental Protection Agency, Region 9

4-12-11
Date

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This signature sheet documents the Guam EPA concurrence in the selection of No Action as the remedial action in this ROD for Site Wide OU Sites 45, 49, 59, 61, 67, 68, and 69, Andersen AFB, Guam.

_____ _____

IVAN C. QUINATA Date
Administrator
Guam Environmental Protection Agency

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Table 1-1
Data Certification Summary.

Decision Summary Sections	Site 45	Site 49	Site 59	Site 61	Site 67	Site 68	Site 69
List of COCs and their respective concentrations	NA	NA	NA	NA	NA	NA	NA
Baseline risk represented by the COCs	NA	NA	NA	NA	NA	NA	NA
Cleanup levels established for COCs and the basis for these levels	NA	NA	NA	NA	NA	NA	NA
How source materials constituting principal threats will be addressed	NA	NA	NA	NA	NA	NA	NA
Current and reasonably anticipated future land use assumptions and current and potential future beneficial uses of groundwater used in the baseline risk assessment and ROD	X	X	X	X	X	X	X
Potential land and groundwater use that will be available at the site as a result of the selected remedies	X	X	X	X	X	X	X
Estimated capital, annual operation and maintenance, and total present worth costs, discount rate, and the number of years over which the remedy cost estimates are projected	NA	NA	NA	NA	NA	NA	NA
Key factor(s) that led to selecting the remedy (i.e., describe how the selected remedy provides the best balance of tradeoffs with respect to the balancing and modifying criteria, highlighting criteria key to the decision)	NA	NA	NA	NA	NA	NA	NA

Notes:
COC = contaminant of concern
NA = not applicable
ROD = Record of Decision

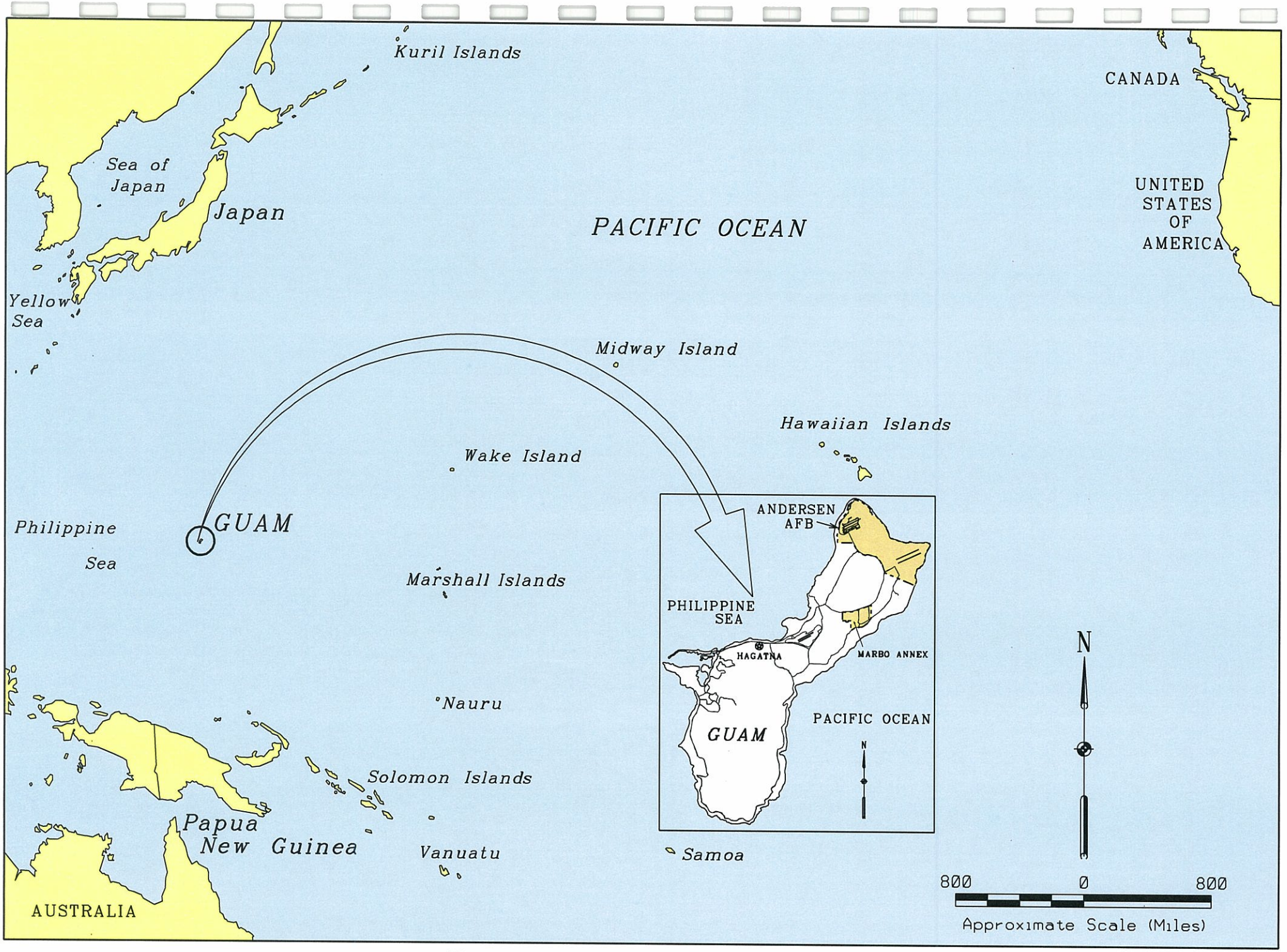


Figure 1-1. Location Map of Guam.

Figure 1–2. Location Map of Tumon Tank Farm, Northwest Field, and Main Base, Andersen Air Force Base, Guam.

2.0 Decision Summary

The Decision Summary identifies the selected remedies for Sites 45, 49, 59, 61, 67, 68, and 69; explains how the remedies fulfill statutory and regulatory requirements; and provides a substantive summary of the AR file that supports the remedy selection decision.

2.1 Site Names, Locations, and Descriptions

The following section presents descriptions of each of the sites and their locations.

Site 45

Full Site Name:	IRP Site 45
CERCLIS ID Number:	GU6571999519
Site Location:	Tumon, Guam
Site Type:	Former Underground Storage Tank (UST)

Site 45 is located in the Tumon Tank Farm and consists of a former 23,000-gallon UST used for the temporary storage of fuel-water mixtures drained from fuel transfer lines (Figures 2-1 and 2-2) (EA Engineering, Science, and Technology, Inc. [EA], 2006a). Liquids held in the recovery tank were routinely transferred to mobile bowser tanks for transport outside of the tank farm. Tank dimensions were reported as 12 feet in diameter by 28 feet deep. In July 2004, 6,600 gallons of liquid product were removed from the tank, and the tank was capped and sealed in place for future decommissioning. In January 2005, the tank was decommissioned by removing the remaining sludge and fuel and removing the tank from the subsurface. The excavation was later backfilled.

Site 49

Full Site Name:	IRP Site 49
CERCLIS ID Number:	GU6571999519
Site Location:	Yigo, Guam
Site Type:	Former Plantation

Site 49 is located in the northwestern portion of Northwest Field, approximately 200 feet west of Route 3A, near the Ritidian Point cliff line (Figures 2-3 and 2-4) (EA, 2007). The site consists of a cleared 5.5-acre area identified as a former plantation. Historical records do not identify the crop(s); however, coconut trees were present on site during the Phase II Environmental Baseline Survey (EBS) field investigation. During the field investigation, several features of potential concern were identified: three concrete pads, a surface depression, and a concrete cistern that was partially filled with water.

Site 59

Full Site Name:	IRP Site 59
CERCLIS ID Number:	GU6571999519
Site Location:	Yigo, Guam
Site Type:	Surface Debris Disposal Area

Site 59 is located within the Munitions Storage Area (MSA), approximately 100 feet south-southeast of Magazine 7 (Figures 2-3 and 2-5) (EA, 2006b). Aerial photographs show that the 1.0 acre site was in use from 1946 to 1956. During the 2005 field investigation, the primary site feature was a sparsely vegetated depression approximately 400 feet long by 60 feet wide by 3 feet deep. A surface mound with debris was also present approximately 30 feet north of the depression. Surface debris observed at the site included assorted metallic debris (tin roof sheet metal and corroded metal boxes).

Site 61

Full Site Name:	IRP Site 61
CERCLIS ID Number:	GU6571999519
Site Location:	Yigo, Guam
Site Type:	Surface Debris Disposal Area

Site 61 is located within the MSA, approximately 1,600 feet east of 5th Street (Figures 2-3 and 2-6) (EA, 2006b). The site covers an area of approximately 3.5 acres. During the 2005 field investigation, the primary site features included two circular depressions and a rock outcrop with scattered surface debris. The surface debris included spent 50-caliber bullet casings and deteriorated 55-gallon drum remnants scattered along the path to the site and in surrounding areas. One 5-inch Naval round was identified at the site and removed by Explosive Ordnance Disposal (EOD) personnel. No other munitions and explosives of concern (MEC) were observed at the site.

Site 67

Full Site Name:	IRP Site 67
CERCLIS ID Number:	GU6571999519
Site Location:	Yigo, Guam
Site Type:	Surface Debris Disposal Area

Site 67 is located in the eastern portion of the Main Base (Figures 2-3 and 2-7). The cliff line site covers approximately 4.0 acres (EA, 2006b). During the 2005 field investigation, very little debris was observed on site, other than trash and garbage apparently blown in from typhoons.

Site 68

Full Site Name:	IRP Site 68
CERCLIS ID Number:	GU6571999519
Site Location:	Yigo, Guam
Site Type:	Surface Debris Disposal Area

Site 68 is located in the western portion of the Main Base, along Beach Road (Figures 2-3 and 2-8) (EA, 2006b). The sparsely vegetated site covers approximately 10 acres. The primary site features include an open area of very thin soil with shallow limestone bedrock, two asphalt mounds, and one surface depression. During a September 2005 site reconnaissance, two asphalt mounds and a surface depression were observed; however, no debris could be located.

Site 69

Full Site Name:	IRP Site 69
CERCLIS ID Number:	GU6571999519
Site Location:	Tumon, Guam
Site Type:	Former USTs

Site 69 is located in the Tumon Tank Farm. The site consists of seven former USTs, each with a 50,000-barrel capacity (2.75 million gallons per UST), and the associated underground piping system (Figure 2-2) (EA, 2006a). The USTs were formerly used to store pure fuel products. All seven tanks have been removed and the excavation pits have been backfilled.

According to Andersen AFB personnel, the UST piping system was not part of the tank demolition contract and the piping will be removed at a later date under the Environmental Compliance Program. Sampling of soils beneath the piping system will be performed under a separate investigation, following removal of the piping.

2.2 Site History and Enforcement Activities

This section provides background information and summarizes the investigations that led to the ROD. It describes the CERCLA response actions undertaken at the Site Wide OU, Sites 45, 49, 59, 61, 67, 68, and 69.

Due to its primary mission in national defense, the USAF has long been engaged in a wide variety of operations that involve the use, storage, and disposal of hazardous materials. On 14 October 1992, Andersen AFB was formally listed on the National Priorities List by the USEPA to investigate abandoned sites that may have been impacted by the use, storage, and disposal of hazardous materials.

The USAF and USN has conducted environmental investigation and remedial activities at the Site Wide OU, Sites 45, 49, 59, 61, 67, 68, and 69 in accordance with CERCLA under the DERP, which was established by Section 211 of SARA.

As the support agencies, USEPA Region 9 and Guam EPA provide primary oversight of the environmental restoration actions, in accordance with the FFA. The enforcement activities for Andersen AFB were initiated when the USAF entered into a FFA with USEPA Region 9 and Guam EPA (USEPA et al., 1993). The FFA, finalized on 30 March 1993, established procedures for involving federal and territorial regulatory agencies, as well as the public, in the environmental restoration process at Andersen AFB. The FFA was based on applicable environmental laws, including CERCLA, the Hazardous and Solid Waste Act of 1982, SARA, and the NCP.

Funding is provided by the Defense Environmental Restoration Account, a funding source approved by Congress to clean up contaminated sites on U.S. Department of Defense installations.

In accordance with USN policy, to the extent practicable, National Environmental Policy Act (NEPA) values have been incorporated throughout the CERCLA process culminating in this ROD. Separate NEPA documentation will not be issued.

Site 45

Site 45 has been evaluated in the following environmental reports:

- *Expanded Source Investigation – Visual Site Inspection for Andersen Air Force Base* (ICF Technology, Inc. [ICF], 1996)
- *Phase II Environmental Baseline Survey for Tumon Tank Farm, Andersen Air Force Base, Guam* (EA, 1998a)
- *Underground Storage Tank Closure Report for the 23,000-Gallon Fuel Recovery Tank at the Andersen Air Force Base Tumon Tank Farm, Upper Tumon, Guam* (Allied Pacific Environmental Consulting [APEC], 2005)
- *No Further Response Action Planned Decision Document for IRP Sites 44, 45, 46, and 69, Tumon Tank Farm, Andersen Air Force Base, Guam* (EA, 2006a)

Site 45 is located at the Tumon Tank Farm, which was taken out of service in 1993 (Figures 2-1 and 2-2). The site was originally described in the *Expanded Source Investigation – Visual Site Inspection for Andersen Air Force Base* (ICF, 1996). The site was described as a former 23,000-gallon UST used for the temporary storage of fuel-water mixtures drained from fuel transfer lines. Liquids in the recovery tank were routinely transferred, using a dedicated sump pump, to mobile bowser tanks for transport outside the tank farm (ICF, 1996).

Site 45 was included in the Phase II EBS for the Tumon Tank Farm (EA, 1998a). Following the guidelines of Air Force Instruction (AFI) 32-7066, *Environmental Baseline Surveys in Real Estate Transactions* (USAF, 1994), the Phase II EBS classified Site 45 as a property where contamination or the potential for release is indicated but not well characterized, requiring further evaluation.

Demolition of the tanks and buildings at the tank farm began in late 2003. In July 2004, approximately 6,600 gallons of liquid product were removed from the tank, and the tank was capped and sealed in place for future decommissioning. After the product was removed from the UST, the tank bottom still contained approximately 6 inches of sludge and fuel that was later pumped out during decommissioning. A total of 1,200 gallons of sludge and fuel mixture was removed by a pump truck and transferred to 55-gallon drums. The drums were transported to Andersen AFB for proper disposal. In January 2005, the recovery tank was decommissioned, as described in the UST Closure Report (APEC, 2005).

A field investigation was conducted at Site 45 in February 2005 (EA, 2006a). Subsurface soil samples were collected from bottom of the open tank excavation and a risk screening was conducted. No unacceptable risks to human health or the environment were identified.

Site 49

Site 49 has been evaluated in the following environmental reports:

- *Phase II Environmental Baseline Survey for Northwest Field, Andersen Air Force Base, Guam* (EA, 1998b)
- *Remedial Investigation for Sites 47, 48, 49, 50, 51, 52, 53, and 55, Site Wide Operable Unit, Andersen Air Force Base, Guam* (EA, 2007)

Site 49 consists of a cleared 5.5-acre area identified as a former plantation. Historical records do not identify the crop nor provide any additional information on operational history of the site.

Site 49 was evaluated as part of the Phase II EBS (EA, 1998b) and an RI (EA, 2007). Surface soil samples were collected during the Phase II EBS and indicated the presence of manganese at concentrations exceeding the screening level (BTV). Following the guidelines of AFI 32-7066 (USAF, 1994), Site 49 was designated as a property that contains known contamination and required remedial systems or other actions have not been selected or implemented (EA, 1998b).

After the Phase II EBS, the BTV for manganese was re-evaluated and increased from 3,150 milligrams per kilogram [mg/kg] to 5,500 mg/kg (EA, 2002). As a result, no unacceptable risks to human health or the environment were identified at Site 49.

Site 59

Site 59 has been evaluated in the following environmental report:

- *Preliminary Assessment/Site Inspection for Ten IRP Sites, Andersen Air Force Base, Guam* (EA, 2006b)

Aerial photographs show that Site 59 was in use from 1946 to 1956. A search of site-related records was conducted to help further delineate the boundaries of Site 59. Aerial photographs and Base drawings were reviewed; however, no additional information was available on operational history of the site.

A field investigation was conducted at Site 59 in April 2005 (EA, 2006b). Surface and subsurface soil samples were collected and a risk screening was conducted. No unacceptable risks to human health or the environment were identified at Site 59.

Site 61

Site 61 has been evaluated in the following environmental report:

- *Preliminary Assessment/Site Inspection for Ten IRP Sites, Andersen Air Force Base, Guam* (EA, 2006b)

According to a 1953 aerial photograph, Site 61 appeared to be cleared and in use. A search of site-related records was conducted to help further delineate the boundaries of Site 61; however, no additional information was available on operational history of the site.

A field investigation was conducted at Site 61 in May 2005 (EA, 2006b). Surface soil samples were collected and no unacceptable risks to human health or the environment were identified at the site.

Site 67

Site 67 has been evaluated in the following environmental report:

- *Preliminary Assessment/Site Inspection for Ten IRP Sites, Andersen Air Force Base, Guam* (EA, 2006b)

Site 67 is a cliff line dump site located in the eastern portion of the Main Base. A search of site-related records was conducted to help further delineate the boundaries of Site 61; however, no additional information was available on operational history of the site.

A field investigation was conducted at Site 67 in June 2005 (EA, 2006b). Surface soil samples were collected and no unacceptable risks to human health or the environment were identified at the site.

Site 68

Site 68 has been evaluated in the following environmental report:

- *Preliminary Assessment/Site Inspection for Ten IRP Sites, Andersen Air Force Base, Guam* (EA, 2006b)

Site 68 is a waste pile located in the western portion of the Main Base. A search of site-related records was conducted to help further delineate the boundaries of Site 61; however, no additional information was available on operational history of the site.

A field investigation was conducted at Site 68 in June 2005 (EA, 2006b). Surface soil samples were collected and no unacceptable risks to human health or the environment were identified at the site.

Site 69

Site 69 has been evaluated in the following environmental reports:

- *Phase II Environmental Baseline Survey for Tumon Tank Farm, Andersen Air Force Base, Guam* (EA, 1998a)
- *No Further Response Action Planned Decision Document for IRP Sites 44, 45, 46, and 69, Tumon Tank Farm, Andersen Air Force Base, Guam* (EA, 2006a)

Site 69 is located in the Tumon Tank Farm (Figure 2-2). The site consisted of seven former USTs, each with a 50,000-barrel capacity (2.75 million gallons per UST) and the associated underground piping system. The USTs were used to store pure fuel products.

By September 1996, six of the seven fuel tanks had been emptied and cleaned. The seventh tank, Tank 3, was emptied in April 1998.

A site investigation was conducted at Site 69 from May to July 2004 (EA, 2006a). Subsurface soil samples were collected and no unacceptable risks to human health or the environment were identified at the site.

2.3 Community Participation

NCP Section 300.430(f)(3) establishes a number of public participation activities that the lead agency must conduct following preparation of the Proposed Plan and review by the support agency. Components of these items and documentation of how each component was satisfied for Sites 45, 49, 59, 61, 67, 68, and 69, at Andersen AFB, Guam, are described in Tables 2-1 and 2-2.

Responses to comments received during the public comment period are included in the Responsiveness Summary, which is provided as Section 3 of the ROD.

2.4 Scope and Role of Operable Unit

As with many large sites, the environmental problems at Andersen AFB, Guam, are complex. As a result, the USAF, with concurrence from USEPA Region 9 and Guam EPA, has organized the environmental restoration work at Andersen AFB into six OUs as described below.

Main Base OU (Sites 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 25, 26, 27, 28, 29, 34, and 35) – RODs addressing the Main Base OU are currently underway. The sites are proposed to be addressed in seven separate ROD documents as follows:

- Sites 6, 9, and 12 (Group 1)
- Sites 5 and 8 (Group 2)
- Sites 4, 11, 25, 28, and 34 (Group 3)
- Sites 3, 10, 13, 14, 15, and 27 (Group 4)
- Site 2 (Group 5)
- Site 26
- Sites 29 and 35

Final RODs for Groups 1, 2, and 3 were completed in September 2007, and the RODs for the remaining sites are anticipated to be completed by July 2008.

Northwest Field OU (Sites 7, 16, 17, 21, 30, 31, and 36) – A Final ROD addressing Sites 7, 16, 17, 31, and 36 was completed in September 2007. It is anticipated that all remaining Northwest Field OU RODs will be completed by December 2008.

Marianas/Bonins Command (MARBO) Annex OU (Sites 20, 22, 23, 24, 37, and 38) – A Final ROD addressing the MARBO Annex OU was completed in May 1998 and a Five-year ROD Review was completed in July 2004.

Harmon Annex OU (Sites 18, 19, and 39) – A Final ROD addressing the Harmon Annex OU was completed in July 2002.

Urunao OU (Site 40) – A Final ROD addressing the Urunao OU was completed in December 2003.

Site Wide OU (Sites 41 through 78) – The Site Wide OU consists of IRP sites that have been added to the program in recent years, and the sites are distributed geographically across the Main Base, Northwest Field, MARBO Annex, and Tumon Tank Farm. RODs addressing these sites are anticipated to be completed in January 2009. The sites are proposed to be addressed in six separate ROD documents as follows:

- Sites 45, 49, 59, 61, 67, 68, and 69 (Group A)
- Sites 48, 56, 58, 70, and 73 (Group B)
- Sites 47, 50, 51, 53, and 55 (Group C)
- Sites 57, 71, 72, 74, 75, and 76 (Group D)
- Sites 41, 42, 43, 62, 63, 64, 65, 66, 77, and 78 (Group E)
- Sites 44 and 46 (Group F)

Due to presence of MEC, two sites (52 and 60) are planned to be transferred to the Navy's Military Munitions Response Program (MMRP). Under the MMRP, a ROD will be completed for these sites after further investigations/feasibility studies are completed with respect to MEC.

2.5 Site Characteristics

This section describes the physical characteristics of the seven sites addressed in this ROD. Brief descriptions are provided for each site. Guam is the largest, most populated, and southernmost island in the Mariana Islands, located in the western Pacific Ocean (Figure 1-1). Relative to Guam, Hawaii is located 3,700 miles to the east-northeast and Japan is located 1,560 miles to the north. Guam is approximately 30 miles long, varies in width from 4 to 12 miles, and has a total land area covering approximately 209 square miles.

2.5.1 Physiography and Climate

Physiographically, the island of Guam may be divided into northern and southern regions, which are separated by the Adelup Fault. The northern region is a limestone plateau consisting of rolling hills and cliff lines ranging from 200 to 600 feet above mean sea level (msl).

Andersen AFB consists of multiple parcels of land located on the northern half of Guam (Figure 1-2), and is situated on an undulating limestone plateau with surficial karst features. The Base property includes the Main Base (formerly North Field) and the Northwest Field. It is approximately 8 miles wide by 2 to 4 miles long, and covers approximately 24.5 square miles.

Guam is located at 13° 27' north latitude (approximately 900 miles north of the equator), creating a year-round warm and humid climate. The mean annual temperature is 81 degrees Fahrenheit (°F). Daily temperatures range from the lower 70s to the upper 80s °F. Relative humidity ranges from 65 to 80 percent in the afternoon and 85 to 100 percent in the evening. Guam has two distinct seasons, a wet and a dry season. The dry season is typically from December to June, and the wet season occurs from July through November. Approximately 65 percent of the annual precipitation falls during these five rainy months, and the annual rainfall on northern Guam averages between 80 and 100 inches.

The dominant winds are the trade winds, blowing from the east or northeast with velocities between 4 and 12 miles per hour throughout the year. Storms may occur at any time during the year, although tropical storms and typhoons are more frequent during the rainy season. Large rainfall events associated with typhoons are common, with as much as 25 inches of rain in a 24-hour period (Ward et al., 1965).

These climatic conditions hold true for all sites covered by this ROD. Site-specific physiography is discussed in more detail in the sections below.

Site 45

Site 45 is located in the central portion of Tumon Tank Farm, which lies approximately 5.5 miles south of the Main Base. The tank farm is situated on an undulating limestone plateau. Site 45 consists of a backfilled area that was formerly the location of a 23,000-gallon UST. The elevation of the ground surface is approximately 216 feet above msl (EA, 2006a).

Site 49

Site 49 is located in the northwestern portion of Northwest Field, west of Route 3A near the Ritidian Point cliff line. The site consists of a cleared 5.5-acre area that contains a concrete cistern, three concrete pads, and a small surface depression. Site 49 is situated on an undulating limestone plateau. The site slopes gently to the northeast with elevations ranging from approximately 490 to 501 feet above msl (EA, 2007).

Site 59

Site 59 covers an area of approximately 1.0 acre and is located south-southeast of Magazine 7 in the MSA. The primary site feature is a sparsely vegetated depression approximately 400 feet long by 60 feet wide by 3 feet deep. A surface mound is also present approximately 30 feet north of the depression. Other than the depression and mound, the topography at and immediately surrounding the site is relatively flat, with elevations ranging from approximately 455 to 460 feet msl (EA, 2006b).

Site 61

Site 61 covers an area of approximately 3.5 acres and is located east of 5th Street in the MSA. Two relatively shallow surface depressions are present in the eastern portion of the site. The depressions are circular in shape, each approximately 80 to 100 feet in diameter. Limestone bedrock, approximately 90 feet long and 25 feet wide, crops out in the western portion of the

site. Elevation of the densely vegetated site ranges from approximately 510 to 520 feet above msl (EA, 2006b).

Site 67

Site 67 covers an area of approximately 4.0 acres and is located in the eastern portion of the Main Base, adjacent to a quarry. The site is situated on one of the ledges that occur along the Main Base eastern cliff line as it descends from the top of the limestone plateau to the ocean. Site 67 is densely vegetated and slopes gently to the southeast, with elevations ranging from approximately 140 to 145 feet above msl (EA, 2006b).

Site 68

Site 68 covers an area of approximately 10 acres and is located in the western portion of the Main Base, along Beach Road. The primary site surface features include on open, sparsely vegetated area of very thin soil with shallow limestone bedrock, two asphalt mounds, and one surface depression. Elevation of the site ranges from approximately 465 to 470 feet above msl (EA, 2006b).

Site 69

Site 69 is located in the Tumon Tank Farm, approximately 5.5 miles south of the Main Base. The site consists of the footprints of seven former USTs, which are spread out within the tank farm. Each UST footprint is approximately 120 feet in diameter. The USTs have been removed and the excavations have been backfilled. The ground surface elevations at the former tank locations range from approximately 234 to 242 feet above msl (EA, 2006a).

2.5.2 Geology and Hydrogeology

The geology of the Northwest Field, MSA, Main Base, and Tumon Tank Farm consists of the Mariana and Barrigada Limestones, which are underlain at depth by the volcanic rocks of the Alutom Formation:

- The Barrigada Limestone consists of massive, well-lithified to friable, medium- to coarse-grained, white, foraminiferal limestone.
- The Mariana Limestone Detrital Facies consists of well-lithified to friable, fine- to coarse-grained, white, detrital limestone.
- The Mariana Limestone Reef Facies consists mainly of corals in a matrix of encrusting algae and is characteristically white, massive, and porous to cavernous.

The younger Mariana Limestone overlies the Barrigada Limestone and is exposed on the surface of most of the northern plateau. Karst features such as sinkholes and caves have formed within the limestone formations by geomorphic activity.

Soils formed on the limestone surface of the northern plateau consist predominantly of the following three series of upland limestone soils: Guam, Guam Urban Land Complex, and Ritidian-Rock Outcrop Complex:

- The Guam cobbly clay loam is derived from sediments overlying porous coralline limestone. It is neutral to mildly alkaline with moderately rapid permeability. The surface layer is usually removed or mixed with underlying material during construction. The soil is composed of dusky red, gravelly, clay loam. The depth to limestone is usually 2 to 10 inches, unless landscaping has taken place.

- The Guam-Urban land complex is commonly composed of 55 percent Guam cobbly clay loam and 45 percent urban land. Most areas have been disturbed by land shaping for urban development and the surface layer has typically been removed and mixed with underlying materials during construction. The subsoil is composed of dusky red, cobbly clay loam with the depth to limestone usually within 2 to 10 inches. The soil is neutral to mildly alkaline, and well drained with moderately rapid permeability.

- The Ritidian-Rock outcrop complex at 15 to 60 percent slopes is on dissected limestone plateaus and escarpments with irregular or elongated shapes. This soil type is composed of 50 percent Ritidian extremely cobbly clay loam and 45 percent rock outcrop and is a derivative of coralline limestone. The depth to limestone usually within 2 to 10 inches. The soil is mildly to moderately alkaline, is dark reddish brown, and moderately permeable.

These soils are generally very shallow to shallow, well-drained, and range from flat to gently sloping on the interior to extremely steep along the cliff lines (Young, 1988).

On the northern half of Guam, groundwater occurs at depth in the porous limestone deposits of the Barrigada and Mariana Limestones. The aquifer, called the Northern Guam Lens, occurs as a freshwater lens floating on seawater (Barrett, Harris, & Associates, 1982). Water table elevations range from near sea level at coastal areas to a maximum of approximately 6 feet above msl. The groundwater flows through openings and fissures in the highly permeable limestone and ultimately discharges along the coastline.

Site 45

Site 45 is situated on the Barrigada Limestone. Excavation activities associated with the removal of the UST have removed most of the soil at Site 45 and exposed the limestone bedrock. Where present, the soil consists of the Guam-Urban Land Complex (EA, 2006a).

Based on surface elevation, the depth to groundwater beneath Site 45 is approximately 216 feet below ground surface (bgs). The flow of groundwater beneath the site is most likely to the west toward Tumon Bay.

Site 49

Site 49 is located approximately 300 feet inland of the plateau cliff line, and situated entirely on the reef facies of the Mariana Limestone. The soil at Site 49 consists of Guam cobbly clay loam (EA, 2007).

The depth to groundwater beneath Site 49 is approximately 495 feet bgs. The flow of groundwater beneath the site is most likely to the west toward the Philippine Sea.

Site 59

Site 59 is situated on the Barrigada Limestone, and soil consists of Guam cobbly clay loam (EA, 2006b).

The depth to groundwater beneath Site 59 is estimated at approximately 455 feet bgs. Based on historical groundwater data, the prevailing flow of groundwater in the site area is to the northeast (EA, 1998c).

Site 61

Site 61 is situated on the detrital facies of the Mariana Limestone, and soil consists of the Guam-Urban Land Complex (EA, 2006b).

The depth to groundwater beneath Site 61 is estimated at approximately 517 feet bgs. Based on historical groundwater data, the prevailing flow of groundwater in the site area is to the north-northeast (EA, 1998c).

Site 67

Site 67 is located approximately 300 feet inland of the plateau cliff line, and situated on the reef facies of the Mariana Limestone. The soil on site consists of the Ritidian-Rock Outcrop Complex (EA, 2006b).

The depth to groundwater beneath Site 67 is approximately 140 feet bgs. Based on historical groundwater data, the prevailing flow of groundwater in the site area is to the northeast toward the Pacific Ocean (EA, 1998c).

Site 68

Site 68 is situated on the Barrigada Limestone, and soil consists of Guam cobbly clay loam (EA, 2006b).

The depth to groundwater beneath Site 68 is estimated at approximately 465 feet bgs. Based on historical groundwater data, the prevailing flow of groundwater in the site area is to the north (EA, 1998c).

Site 69

Site 69 is situated on the Barrigada Limestone. Excavation activities associated with the removal of the USTs have removed and disturbed most soil at Site 69 and exposed the limestone bedrock. Where present, the soil at Site 69 consists of the Guam-Urban Land Complex (EA, 2006a).

Based on surface elevations, groundwater beneath the former USTs ranges in depth from approximately 234 to 242 feet bgs. The flow of groundwater beneath the site is most likely to the west toward Tumon Bay.

2.5.3 Surface Water Hydrology

No wetlands or surface waters are located in the vicinity of Sites 45, 49, 59, 61, 67, 68, or 69. The geology in the region is dominated by highly porous limestone bedrock located below very shallow soils with moderately rapid permeability. As a result, storm water runoff is slow and precipitation readily infiltrates into the vadose zone, preventing the formation of surface streams, rivers, and lakes.

2.5.4 Ecology

Site 45

Vegetation at and in the vicinity of Site 45 consists of turf grasses, shrubs, and low trees. The site is of low ecological habitat value. No threatened or endangered species have been observed at or in the vicinity of the Tumon Tank Farm, and the onsite habitat is generally not suitable for such species.

Site 49

Site 49 is located within the overlay area of the Guam National Wildlife Refuge, and near several areas previously proposed as critical habitat for the endangered fire tree (*Hayun-lago*), ufa halomtano (*Heritiera longipetiolata*), Mariana crow (*Corvus kubaryi*), and Mariana fruit bat (*Pteropus mariannus mariannus*). The ecological habitat at the site consists primarily of mixed herbaceous and mixed shrub vegetation. The site would be a suitable habitat for the Mariana crow, even though this area has not been designated critical habitat. Fire tree and ufa halomtano are two endangered tree species that have been observed in the Northwest Field; however, no known endangered or threatened species were observed at Site 49.

Site 59

The ecological habitat at Site 59 consists primarily of mixed secondary growth limestone forest with infrequent areas of heavy undergrowth beneath the canopy of taller emergent trees. A majority of the low vegetation consists of ferns, low grasses, small trees, and low vines. Several areas in the Northwest Field were previously proposed as critical habitat for several plants and animals. The endangered fire tree (*Hayun-lago*) and ufa halomtano (*Heritiera longipetiolata*) have been observed in the Northwest Field; however, no known endangered or threatened species were observed at Site 59.

Site 61

Site 61 is located near the Guam National Wildlife Refuge and several areas previously proposed as critical habitat for the endangered fire tree (*Hayun-lago*), ufa halomtano (*Heritiera longipetiolata*), Mariana crow (*Corvus kubaryi*), and Mariana fruit bat (*Pteropus mariannus mariannus*). The ecological habitat at the site consists primarily of limestone forest with sparse undergrowth beneath the canopy of taller trees. The fire tree and ufa halomtano have been observed in the Northwest Field; however, no known endangered or threatened species were observed at Site 61.

Site 67

The ecological habitat at Site 67 consists primarily of mixed herbaceous and mixed shrub vegetation. The site would be a suitable habitat for the Mariana crow (*Corvus kubaryi*), even though this area has not been designated critical habitat. Fire tree (*Hayun-lago*) and ufa halomtano (*Heritiera longipetiolata*) are two endangered tree species that have been observed in the Northwest Field; however, no known endangered or threatened species were observed at Site 67.

Site 68

The ecological habitat at Site 68 consists primarily of mixed secondary growth limestone forest with infrequent areas of heavy undergrowth beneath a canopy of taller emergent trees. A majority of the low vegetation consists of ferns, low grasses, small trees, and low vines. Several areas in the Northwest Field were previously proposed as critical habitat for several plants and animals. In addition, fire tree (*Hayun-lago*) and ufa halomtano (*Heritiera longipetiolata*) have been observed in the Northwest Field; however, no known endangered or threatened species were observed at Site 68.

Site 69

Vegetation at and in the vicinity of Site 69 consists of turf grasses, shrubs, and low trees. The site is of low ecological habitat value. No threatened or endangered species have been observed at or in the vicinity of the Tumon Tank Farm, and the onsite habitat is not suitable for such species.

2.5.5 Previous Site Characterization Activities

Site 45

The Phase II EBS indicated that the Tumon Tank Farm was taken out of service in 1993; however, the recovery tank still contained off-specification fuel during the Phase II EBS investigation. Because the tank was an integral part of the fuel distribution system and the fuel was still being stored in the system, no field sampling was conducted during the Phase II EBS. Instead, the site was recommended for further evaluation after decommissioning of the Tumon Tank Farm.

Removal of the UST at Site 45 resulted in an excavation approximately 22 feet in diameter and

22 feet deep. Five compliance soil samples were collected from the excavation for analysis of lead and total petroleum hydrocarbons-diesel range organics (TPH-DRO). A detailed description of the UST removal activities and sampling results are presented in the UST Closure Report (APEC, 2005).

A field investigation was conducted at Site 45 in February 2005 and the results are presented in the NFRAP Decision Document (EA, 2006a). The field investigation included a location survey, site reconnaissance, and subsurface soil sampling. A total of four subsurface soil samples were collected from the bottom of the open tank excavation. The samples were collected below the concrete floor of the former tank, above the limestone bedrock. All of the samples were analyzed for volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), TPH-DRO, total petroleum hydrocarbons-gasoline range organics (TPH-GRO), and Target Analyte List (TAL) metals (cadmium, chromium, and lead).

None of the subsurface soil samples contained VOCs, TPH-GRO, or metals at concentrations exceeding the respective screening levels (USEPA Region 9 residential preliminary remediation goals [PRGs] or background threshold values [BTVs]) or the Guam EPA Cleanup Levels. The following analytes were detected at concentrations exceeding screening criteria:

- Benzo(a)pyrene was detected in one sample at a concentration of 170 micrograms per kilogram (µg/kg), exceeding the residential PRG of 62 µg/kg.
- TPH-DRO was detected in the same sample at 420 mg/kg, exceeding the Guam EPA Cleanup Level (50 mg/kg). TPH-DRO was also detected in another sample at 170 mg/kg.

Benzo(a)pyrene was identified in subsurface soil at concentrations that could potentially pose a risk to human health or the environment. However, cancer risks for benzo(a)pyrene were within the risk range of 10^{-6} to 10^{-5} (62 to 620 µg/kg) for the most conservative scenario—potential future residents. No non-cancer risks were identified. TPH-DRO was detected in two samples at concentrations exceeding the Guam EPA Cleanup Level. This indicates that diesel-type materials are present in subsurface soil; however, the two exceedances should not pose a risk to human health or the environment. No unacceptable risks were identified for subsurface soil. Therefore, Site 45 was recommended for a NFRAP Decision, as a property where contamination is present but falls below established action levels (EA, 2006a).

Site 49

Site 49 was initially evaluated as part of the Phase II EBS for the Northwest Field (EA, 1998b). The Phase II EBS consisted of a records search, topographic survey, soil gas sampling, and surface soil sampling. No historical records were found during the records search concerning any structures on site and no maps were identified that indicated the nature of operations at the site.

The topographic location survey was performed to help define the site features and boundaries. Field personnel surveyed the control points at various locations across the site for use as reference points. A visual inspection of the site vicinity was conducted to identify any additional

items of interest. The site boundaries were adjusted to include items of interest. Features of concern identified at the site included three concrete pads, a surface depression, and a concrete cistern partially filled with water. Coconut trees were also present on the site.

The soil gas survey consisted of collecting 13 soil gas samples and analyzing the samples for VOCs using an onsite gas chromatograph/mass spectrometer. No VOCs were detected in any of the samples.

Nine composite surface soil samples (including three duplicates) were collected during the Phase II EBS. The samples were collected at 2 to 4 inches bgs and analyzed for semivolatile organic compounds (SVOCs) and TAL metals. With the exception of manganese, none of samples contained SVOCs or TAL metals at concentrations exceeding residential PRGs or BTVs.

At the time of the Phase II EBS, Site 49 was designated as property that contains known contamination and required remedial systems or other actions have not been selected or implemented, following the guidelines of AFI 32-7066 (USAF, 1994). This designation was based on manganese concentrations exceeding the BTV in three surface soil samples. Since the Phase II EBS was completed, the BTV for manganese has been re-evaluated (EA, 2002). Based on the revised BTV (revised from 3,150 mg/kg to 5,500 mg/kg), manganese was eliminated as a COPC. Under AFI 32-7066, Site 49 was re-designated as a NFRAP Decision, as a property where contamination is present but falls below established action levels. As a result, no additional samples have been collected and Site 49 was considered suitable for unlimited use and unrestricted access.

Site 59

A PA/SI was conducted at Site 59 in April 2005 and the results are presented in the PA/SI report (EA, 2006b). The PA/SI consisted of a records search, location survey, site reconnaissance, geophysical survey, surface soil sampling, and subsurface soil sampling. The presence of a surface mound with debris, located approximately 30 feet north of a sparsely vegetated depression, measuring approximately 400 feet long, 60 feet wide, and 3 feet deep, was confirmed during the 2005 site reconnaissance. Observed wastes included metal debris, tin roof sheet metal, and corroded metal boxes. The geophysical survey identified numerous anomalies throughout the site generally related to metallic surface debris. A few anomalies were identified that did not coincide with surface debris. These anomalies were suspected to represent buried metallic material. In response, test pits were excavated at the locations of these anomalies.

A total of 16 surface soil samples (including 2 duplicates) were collected and analyzed for SVOCs, PAHs, pesticides, TAL metals, and explosive residues. Seven of the surface soil samples were collected from the depression, six were collected around the depression, and three were collected from the surface mound. None of the surface soil samples contained SVOCs, PAHs, pesticides, or explosive residues at concentrations exceeding the respective screening levels (residential PRGs and BTVs).

The following metals were detected in surface soil at concentrations exceeding BTVs:

- Aluminum was detected in one sample at a concentration of 178,000 mg/kg, exceeding the BTV of 173,500 mg/kg.
- Manganese was detected in the same sample at a concentration of 5,840 mg/kg, exceeding the BTV of 5,500 mg/kg.
- Iron was detected in two samples at concentrations of 145,000 and 136,000 mg/kg, exceeding the BTV of 116,495 mg/kg.

Eight test pits were excavated to depths ranging from 4 inches to 9 feet bgs and lengths ranging from 20 to 41 feet. Debris consisting of scrap metal, cans, and drum caps were observed in four of the test pits, coinciding with the subsurface geophysical anomalies. Three subsurface soil samples were collected from three of the test pits and analyzed for VOCs, SVOCs, PAHs, pesticides, TAL metals, and explosive residues. One subsurface soil sample was collected from a test pit in the depression (TP-3) and two were collected from test pits in the mound (TP-1 and TP-2). None of the subsurface soil samples contained VOCs, SVOCs, pesticides, TAL metals, or explosive residues at concentrations exceeding screening levels (residential PRGs or BTVs). The following PAHs exceeded screening levels:

- Benzo(a)pyrene was detected in one sample at a concentration of 543 µg/kg, exceeding the residential PRG of 62 µg/kg.
- Dibenz(a,h)anthracene was detected in the same sample at a concentration of 78.6 µg/kg, exceeding the residential PRG of 62 µg/kg.

Of the 16 surface soil and 3 subsurface soil samples collected from Site 59, there were very few exceedances of the screening levels (residential PRGs and BTVs). These few exceedances, and their scattered distribution across the site, do not appear to relate to distinct "hot spots." Aluminum, iron, and manganese were identified in surface soil as posing a potential risk to human health or the environment. Aluminum concentrations ranged from 10,400 to 178,000 mg/kg, with one sample exceeding the BTV (173,500 mg/kg). Iron concentrations ranged from 29,400 to 145,000 mg/kg, with two samples exceeding the BTV (116,495 mg/kg). Manganese concentrations ranged from 357 to 5,840 mg/kg with one sample exceeding the BTV (5,500 mg/kg). The exposure point concentrations of aluminum (116,000 mg/kg), iron (92,700 mg/kg), and manganese (2,930 mg/kg) were all well below their respective BTVs. Therefore, no unacceptable risks were identified for surface soil.

Benzo(a)pyrene and dibenz(a,h)anthracene were identified in subsurface soil as posing a potential risk to human health or the environment. Benzo(a)pyrene concentrations ranged from 0.47 to 543 µg/kg, and dibenz(a,h)anthracene concentrations ranged from 0.17 to 62 µg/kg. Cancer risks were within the risk range of 10^{-6} to 10^{-5} (62 to 620 µg/kg) for the most conservative scenario—potential future residents. No non-cancer risks were identified. Therefore, no unacceptable risks were identified for subsurface soil.

Based on the risk screening, the exceedances do not pose unacceptable risks to human health or the environment. Therefore Site 59 was recommended for a NFRAP Decision, as a property where hazardous or petroleum products or their derivatives were stored, but no release, disposal or migration from adjacent areas occurred (EA, 2006b).

Site 61

A PA/SI was conducted at Site 61 in May 2005 and the results are presented in the PA/SI report (EA, 2006b). The PA/SI consisted of a records search, location survey, site reconnaissance, and surface soil sampling. The site reconnaissance identified physical evidence of surface disposal. Observed wastes included spent 50-caliber bullet shells and deteriorated 55-gallon drum remnants scattered along the path to the site and in surrounding areas. One 5-inch Naval round was identified at the site and removed by EOD personnel. No other MEC considered a potential explosive threat has been observed at the site.

A total of nine surface soil samples (including one duplicate) were collected and analyzed for SVOCs, PAHs, pesticides, and TAL metals. The samples were not analyzed for explosive residues because the site was not considered an ordnance disposal site, based on the review of historical records and interviews with Andersen AFB EOD personnel. None of the surface soil samples contained SVOCs, PAHs, pesticides, or TAL metals at concentrations exceeding the respective screening levels (residential PRGs and BTVs). No unacceptable risks to human health or the environment were identified and Site 61 was recommended for a NFRAP Decision, as a property where hazardous or petroleum products or their derivatives were stored, but no release, disposal or migration from adjacent areas occurred (EA, 2006b).

Site 67

During a September 2000 preliminary site visit, scrap metal and construction debris were observed at the bottom of the cliff line, which is located off site.

A PA/SI was conducted at Site 67 in June 2005 and the results are presented in the PA/SI report (EA, 2006b). The PA/SI consisted of a records search, location survey, site reconnaissance, surface soil sampling, and subsurface soil sampling. During the site reconnaissance, no stressed vegetation was observed and little debris was found on site, other than some trash and garbage apparently blown in from previous typhoons.

Twelve surface soil samples were collected and analyzed for SVOCs, PAHs, pesticides, and TAL metals. Four subsurface soil samples were collected and analyzed for VOCs, SVOCs, PAHs, pesticides, and TAL metals. The samples were not analyzed for explosive residues because the site was not considered an ordnance waste dump and no MEC was observed. No analytes were detected in the surface or subsurface soil samples at concentrations exceeding their respective screening levels (residential PRGs and BTVs). Therefore, no unacceptable risks to human health or the environment were identified and Site 67 was recommended for a NFRAP Decision, as a property where hazardous or petroleum products or their derivatives were stored, but no release, disposal or migration from adjacent areas occurred (EA, 2006b).

Site 68

During a September 2000 preliminary site visit, industrial-sized machining tools (tap and die sets), suspected asbestos-containing transite piping, glass bottles, metal spray cans, an automobile frame, toilets, miscellaneous metal debris, and several asphalt mounds were observed in the open area at Site 68. The primary site features included two asphalt mounds and one surface depression.

A PA/SI was conducted at Site 68 in June 2005 and the results are presented in the PA/SI report (EA, 2006b). The PA/SI consisted of a records search, location survey, site reconnaissance, surface soil sampling, and subsurface soil sampling. During the site reconnaissance, the two asphalt mounds and the surface depression identified during a previous September 2000 preliminary site visit were verified. However, none of the other debris and materials identified during a September 2000 preliminary site visit could be verified.

Fifteen surface soil samples (including one duplicate) were collected and analyzed for SVOCs, PAHs, pesticides, and TAL metals. Lead was detected in one sample at a concentration of 402 mg/kg, slightly exceeding the residential PRG of 400 mg/kg. No other analytes were detected in the surface soil samples at concentrations exceeding their respective screening levels (residential PRGs and BTVs).

Seven test pits were excavated to depths ranging from 2.5 to 4.5 feet bgs and lengths ranging from 34 to 43 feet. A uniformly red, silty, clay soil with roots and rocks was encountered in test pits TP-01 through TP-04. Glass debris was observed in test pit TP-02. Limestone bedrock was encountered in test pits TP-05 through TP-07. Five subsurface soil samples were collected from four of the test pits and analyzed for VOCs, SVOCs, PAHs, pesticides, TAL metals, and explosive residues. Two of the subsurface soil samples were collected from test pits in Mound 1 and three samples were collected from test pits in Mound 2. No analytes were detected in the subsurface soil samples at concentrations exceeding screening levels (residential PRGs and BTVs).

Of the 15 surface soil and 5 subsurface soil samples collected at Site 68, the only analyte that exceeded a screening level was lead in one surface soil sample (402 mg/kg). This lead concentration is statistically indistinguishable from the residential PRG (400 mg/kg). Therefore, no unacceptable risks to human health or the environment were identified and Site 68 was recommended for a NFRAP Decision, as a property where hazardous or petroleum products or their derivatives were stored, but no release, disposal or migration from adjacent areas occurred (EA, 2006b).

Site 69

The site was identified in the 1995 Phase I EBS (ICF, 1995) and recommended for further characterization under a Phase II EBS (EA, 1998a). At the time of the Phase II EBS field investigation, six of the seven fuel tanks were empty and one tank (Tank 3) contained approximately 180,000 gallons of off-specification JP-8 fuel. Because decommissioning of the fuel storage tanks and associated piping were not complete at the time of the Phase II EBS, soil samples were not collected.

A site investigation was conducted at Site 69 from May to July 2004 and the results are presented in the NFRAP Decision Document (EA, 2006a). The site investigation included a records search, location survey, site reconnaissance, and subsurface soil sampling. A total of 74 discrete subsurface soil samples (including duplicates) were collected from the seven former tank locations. The samples were analyzed for VOCs, PAHs, TPH-DRO, TPH-GRO, and selected TAL metals (cadmium, chromium, and lead).

At the time of the sampling activities, four of the seven tank excavations had been backfilled and the remaining three excavations were open pits. In the open excavation pits (Tanks 1, 3, and 4), subsurface soil samples were collected from the test pit excavations located within and around the tank footprint. Nine tank floor samples were collected from each excavation pit. One tank floor sample was collected near the location where the pipeline and valve box connected to the tank. Because the tank floor was graded from demolition activities, all of the tank floor samples were collected from undisturbed soil. A backhoe was used to excavate the soil overlying the undisturbed soil. The sample depths ranged from 2.0 to 5.5 feet below the tank bottoms.

In the backfilled excavation pits (Tanks 2, 5, 6, and 7), borings were drilled through the fill material in the area of the former tank location. Five borings were drilled at each former tank location and two soil samples were collected from each boring using a split-spoon sampler. At each former tank location, one boring was drilled near the location where the pipeline and valve box connected to the tank. The borings were drilled through the fill until limestone bedrock was encountered. The first sample was collected beneath the tank bottom. The boring was then advanced an additional 10 feet and the second sample was collected.

None of the subsurface soil samples contained VOCs, PAHs, TPH-GRO, or metals at concentrations exceeding the respective screening levels (residential PRGs or BTVs) or the Guam EPA Cleanup Levels. One soil sample collected from the center of the Tank 3 footprint had a TPH-DRO concentration of 82 mg/kg, exceeding the Guam EPA Cleanup Level of 50 mg/kg. This indicates that diesel-type materials are present in subsurface soil; however, the one exceedance does not pose a direct risk to human health or the environment. Based on these results, Site 69 was recommended for a NFRAP Decision, as a property where hazardous or petroleum products or their derivatives were stored, but no release, disposal or migration from adjacent areas occurred (EA, 2006a).

According to Andersen AFB personnel, the UST piping system was not part of the tank demolition contract and the piping will be removed at a later date under the Environmental Compliance Program. Sampling of soils beneath the piping system will be performed under a separate investigation, following removal of the piping.

2.5.6 Nature and Extent of Contamination

Site 45

Subsurface soils were evaluated for potential contamination as a result of the historical use of a 23,000-gallon UST at the site (EA, 2006a). Analytical results for the soil samples indicated that benzo(a)pyrene exceeded the residential PRG in one sample and TPH-DRO exceeded the Guam EPA Cleanup Level in two samples. It was concluded that the exceedances do not pose an

unacceptable risk to human health and the environment. Site 45 was recommended for a NFRAP Decision, as a property where contamination is present but falls below established action levels, allowing for unlimited use of and unrestricted exposure to the land.

Site 49

Surface soils were evaluated for potential contamination as a result of the historical use of the site as a plantation (EA, 2006b). Analytical data for the soil samples resulted in designation of Site 49 for a NFRAP Decision, as a property where contamination is present but falls below established action levels, allowing for unlimited use of and unrestricted exposure to the land.

Site 59

Surface and subsurface soils were evaluated for potential contamination as a result of historical disposal activities at the site (EA, 2006b). Analytical results for the soil samples indicated that a few PAHs and metals exceeded screening levels (residential PRGs and BTVs). Based on the risk screening, no unacceptable risk to human health and the environment were identified. Site 59 was recommended for a NFRAP Decision, as a property where hazardous or petroleum products or their derivatives were stored, but no release, disposal or migration from adjacent areas occurred, allowing for unlimited use of and unrestricted exposure to the land.

Site 61

Surface soils were evaluated for potential contamination as a result of historical disposal activities at the site (EA, 2006b). Analytical results for the soil samples indicated that there were no exceedances of the screening levels (residential PRGs and BTVs); therefore, no unacceptable risks to human health and the environment were identified. Site 61 was recommended for a NFRAP Decision, as a property where hazardous or petroleum products or their derivatives were stored, but no release, disposal or migration from adjacent areas occurred, allowing for unlimited use of and unrestricted exposure to the land.

Site 67

Surface and subsurface soils were evaluated for potential contamination as a result of historical disposal activities at the site (EA, 2006b). Analytical results for the soil samples indicated that there were no exceedances of the screening levels (residential PRGs and BTVs); therefore, no unacceptable risks to human health and the environment were identified. Site 67 was recommended for a NFRAP Decision, as a property where hazardous or petroleum products or their derivatives were stored, but no release, disposal or migration from adjacent areas occurred, allowing for unlimited use of and unrestricted exposure to the land.

Site 68

Surface and subsurface soils were evaluated for potential contamination as a result of historical disposal activities at the site (EA, 2006b). Analytical results for the soil samples indicated that lead exceeded the residential PRG in one sample at a concentration statistically indistinguishable from the PRG. It was concluded that the exceedance does not pose an unacceptable risk to human health and the environment. Site 68 was recommended for a NFRAP Decision, as a

property where hazardous or petroleum products or their derivatives were stored, but no release, disposal or migration from adjacent areas occurred, allowing for unlimited use of and unrestricted exposure to the land.

Site 69

Subsurface soils were evaluated for potential contamination as a result of the historical use of seven USTs at the site (EA, 2006a). Analytical results for the soil samples indicated that TPH-DRO barely exceeded the Guam EPA Cleanup Level in one sample. It was concluded that the exceedance does not pose an unacceptable risk to human health and the environment. Site 69 was recommended for a NFRAP Decision, as a property where hazardous or petroleum products or their derivatives were stored, but no release, disposal or migration from adjacent areas occurred, allowing for unlimited use of and unrestricted exposure to the land.

2.5.7 Conceptual Site Model

Conceptual site models (CSMs) were not developed for Sites 45, 49, 59, 61, 67, 68, and 69 to depict the potential relationships or exposure pathways between chemical sources and receptors. The analytical results for soil samples collected at the sites during site investigation activities were compared to screening levels (PRGs, BTVs, or Guam Cleanup Levels). Based on the risk screening, all of the sites are considered NFRAP Decision sites, where no unacceptable risks to human health or the environment were identified. Therefore, baseline human health and ecological risk assessments were not conducted for the sites and CSMs were not developed.

2.6 Current and Potential Future Land and Resource Uses

2.6.1 Land Use

As the lead agency, the USN has the authority to determine the future anticipated land use. The following is summary of current land use conditions at the seven sites, as well as surrounding land use.

Site	Current Land Use	Surrounding Land Use
Site 45	Industrial (Stiener, 2007)	Land to the west of the Tumon Tank Farm boundary is occupied by hotels and condominiums.
Site 49	Open space* (USAF, 2006)	Land immediately adjacent to and surrounding Site 49 is currently designated as open space. Land further east of the site is designated as a training area and land further south is designated for administrative use.
Site 59	Open space (USAF, 2006)	Land to the east, south, and west of Site 59 is currently designated as open space. The MSA is located immediately north of the site and is designated for industrial use.
Site 61	Open space (USAF, 2006)	Land immediately adjacent to and surrounding Site 61 is currently designated as open space

Site	Current Land Use	Surrounding Land Use
Site 67	Outdoor recreation (USAF, 2006)	Land adjacent to and surrounding Site 67 is currently designated as outdoor recreation and open space.
Site 68	Aircraft operations and maintenance land use (USAF, 2006)	Land to the north and west of Site 68 is currently designated as open space, and land use to the south and east is currently designated for aircraft operations and maintenance
Site 69	Industrial (Stiener, 2007)	Land to the west of the Tumon Tank Farm boundary is occupied by hotels and condominiums.

* Due to the proximity of the Guam National Wildlife Refuge to Site 49, the site is likely restricted from future residential or commercial development.

Land use for the seven sites, as well as adjacent and surrounding land, is expected to remain the same for the foreseeable future.

2.6.2 Ground and Surface Water Uses

All sites covered under this ROD are located on the Northern Guam Lens aquifer, which is designated by the USEPA as a sole source aquifer, and supplies Guam with approximately 80 percent of its drinking water (Barrett, Harris, & Associates, 1982). Groundwater at the Main Base OU has been monitored regularly as part of the Long-term Groundwater Monitoring Program at Andersen AFB (EA, 2006c). The initial round of groundwater sampling was conducted for all the Main Base monitoring wells in November 1995 (Round 1) and on a semiannual basis (twice a year) thereafter.

The historical groundwater data set for the Main Base has established that there is no connection between the COPCs in the surface and subsurface soils in the five Main Base and Northwest Field IRP sites covered under this ROD and any groundwater contamination. Trichloroethene (TCE) and tetrachloroethene (PCE) have been observed in groundwater samples collected from Main Base monitoring wells at concentrations exceeding the Federal Safe Drinking Water Act's Maximum Contaminant Levels. However, the groundwater contamination has been attributed to a likely TCE/PCE source(s) in the vicinity of Building 18006.

Groundwater beneath Tumon Tank Farm eventually discharges into Tumon Bay, located to the northwest of the facility. No groundwater monitoring wells are located downgradient of Tumon Tank Farm; however, potential impacts to groundwater were considered in the NFRAP Decision Document for Tumon Tank Farm (EA, 2006a), and COPCs at Sites 45 and 69 do not pose a threat to groundwater.

2.7 Summary of Site Risks

Based on the risk screening using analytical results for soil samples collected at the sites during site investigation activities and screening levels (PRGs, BTVs, or Guam Cleanup Levels), no unacceptable risk to human health or the environment were identified. Therefore, baseline

human health and ecological risk assessments were not conducted, and all of the sites are considered NFRAP Decision sites.

2.7.1 Basis for No Action

No unacceptable risks to public health or welfare or the environment were identified at Sites 45, 49, 59, 61, 67, 68, and 69; therefore, no action is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment.

2.8 Statutory Authority Finding

Because the soil sample analytical results for Sites 45, 49, 59, 61, 67, 68, and 69 indicate that there are no unacceptable risks to human or the environment, the USN has determined that no further CERCLA remedial action is necessary at the sites.

Findings of previous site investigations resulted in NFRAP recommendations at five sites (Sites 59, 61, 67, 68, and 69) where hazardous or petroleum products or their derivatives were stored, but no release, disposal or migration from adjacent areas occurred. Findings of previous site investigations resulted in NFRAP recommendations at two sites (Sites 45 and 49) where contamination is present, but falls below established action levels. Therefore, no action is required for any of these sites to allow for unrestricted use of and unlimited exposure to the land.

Because there are currently no hazardous substances, pollutants, or contaminants remaining at the sites above levels that would allow for unlimited use and unrestricted access, a five-year review is not required.

2.9 Documentation of Significant Changes

The Proposed Plan for Sites 45, 49, 59, 61, 67, 68, and 69 was released for public comment on 31 July 2008. The Proposed Plan identified "No CERCLA Action" as the selected remedy. The USN reviewed all written and verbal comments submitted during the public comment period. It was determined that no significant changes to the remedy, as originally identified in the Proposed Plan, were necessary or appropriate.

Table 2-1
Public Notification of Document Availability.

Requirement:	Satisfied by:
Notice of availability of the Proposed Plan must be made in a widely-read section of a major local newspaper.	Notice of availability of the Proposed Plan was published in the *Guam Pacific Daily News* on *July 30, 2008.*
Notice of availability should occur at least two weeks prior to the beginning of the public comment period.	The public comment period began on *July 31, 2008.*
Notice of availability must include a brief abstract of the proposed plan which describes the alternatives evaluated and identifies the preferred alternative [NCP Section 300.430(f)(3)(i)(A)].	Notice of availability included all of the applicable components and is included in Appendix A of this ROD.
Notice of availability should consist of the following information: • Site name and location • Date and location of public meeting • Identification of lead and support agencies • Alternatives evaluated in the detailed analysis • Identification of preferred alternative • Request for public comments • Public participation opportunities including: o Location of information repositories and AR file o Methods by which the public may submit written and oral comments, including a contact person o Dates of public comment period o Contact person for the Restoration Advisory Board	See notice in Appendix A.

Notes:
AR = Administrative Record
NCP = National Oil and Hazardous Substances Pollution Contingency Plan of 1990
ROD = Record of Decision

Table 2-2
Public Comment Period Requirements.

Requirement:	Satisfied by:
Lead agency (USAF) should make document available to public for review on same date as newspaper notification.	Document was made available to the public on *July 31, 2008.* The notification of availability was made on *July 30, 2008.*
Lead agency (USAF) must ensure that all information that forms the basis for selecting the response action is included as part of the AR file and made available to the public during the public comment period.	The USAF maintains information repositories for the Andersen AFB AR file at the Robert F. Kennedy Library at the University of Guam and the Nieves M. Flores Memorial Library in Hagåtña. In addition, the AR file for Andersen AFB is also available on the web at: www.adminrec.com. Data and supporting CERCLA primary documents produced for Andersen AFB are maintained as part of these files and are available to the public.
CERCLA Section 177(a)(2) and NCP Section 300.430(f)(3)(i) require the lead agency (USAF) to provide the public with a reasonable opportunity (30 days) to submit written and oral comments on the Proposed Plan.	The USAF provided a public comment period for the Proposed Plan from *July 31, 2008* to *August 31, 2008.*
The lead agency (USAF) must extend the public comment period by at least 30 additional days upon timely request.	The USAF received no requests to extend the public comment period.
The lead agency (USAF) must provide a public meeting to be held at or near the site during the public comment period. A transcript of this meeting must be made available to the public and be maintained in the AR for the site (pursuant to NCP Section 300.430(f)(3)(i)(E)).	A public meeting was held on *August 14, 2008* at the *Guam Marriott Resort and Spa*. A transcript of this meeting has been added to the AR file.

Notes:
AFB = Air Force Base
AR = Administrative Record
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act of 1980
NCP = National Oil and Hazardous Substances Pollution Contingency Plan of 1990
USAF = United States Air Force

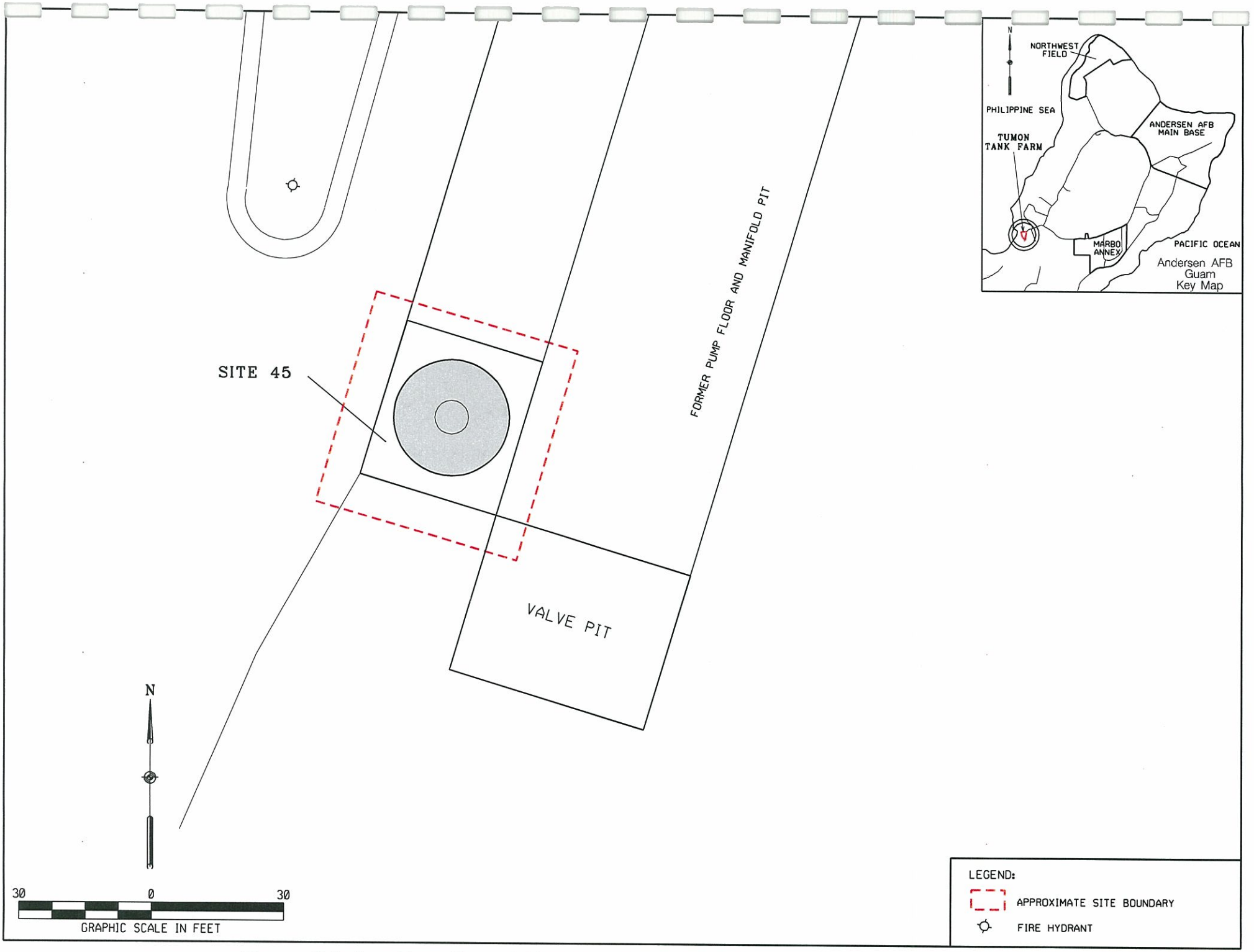


Figure 2-1. Location Map of Site 45, Tumon Tank Farm, Andersen AFB, Guam.

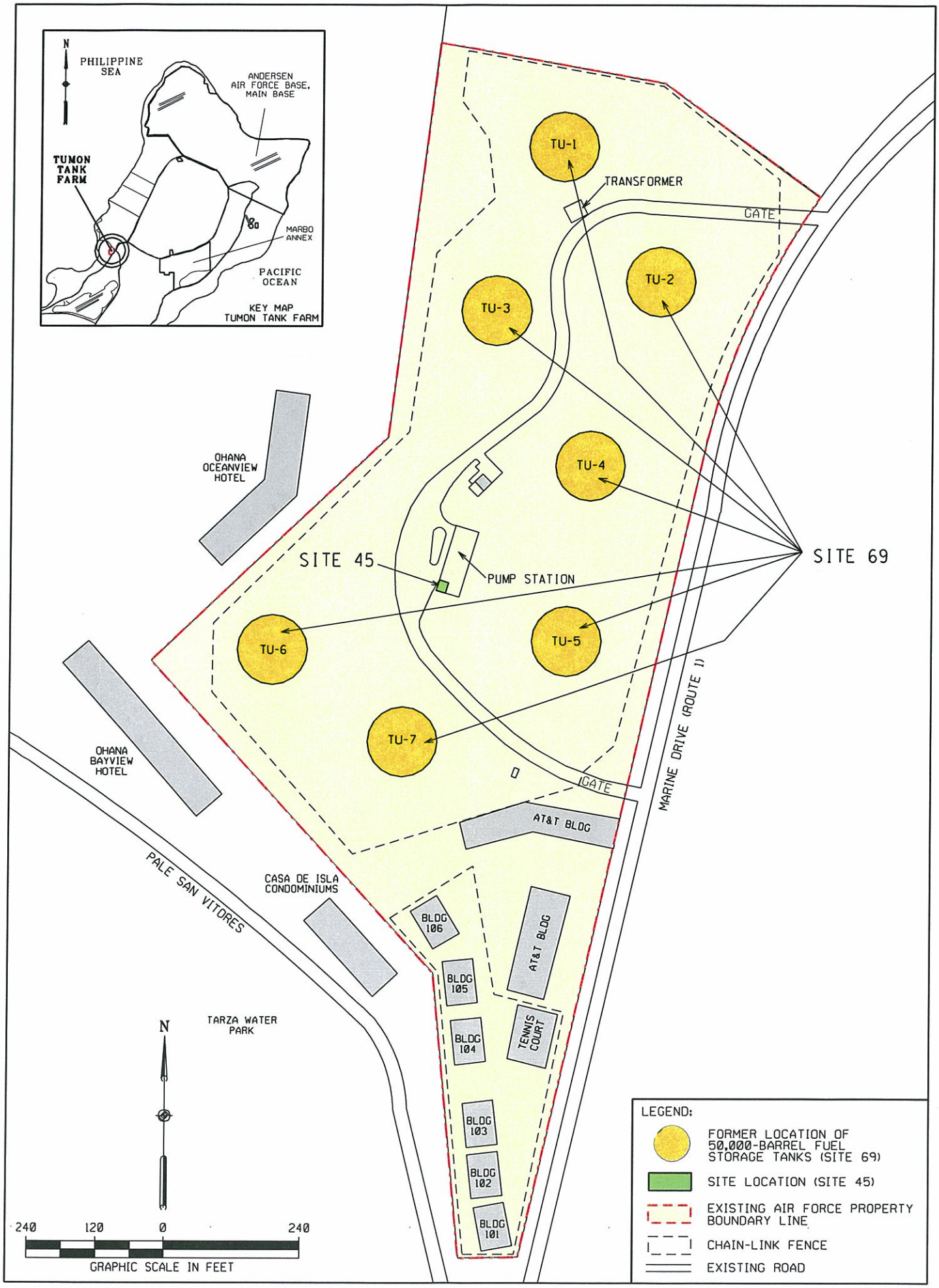
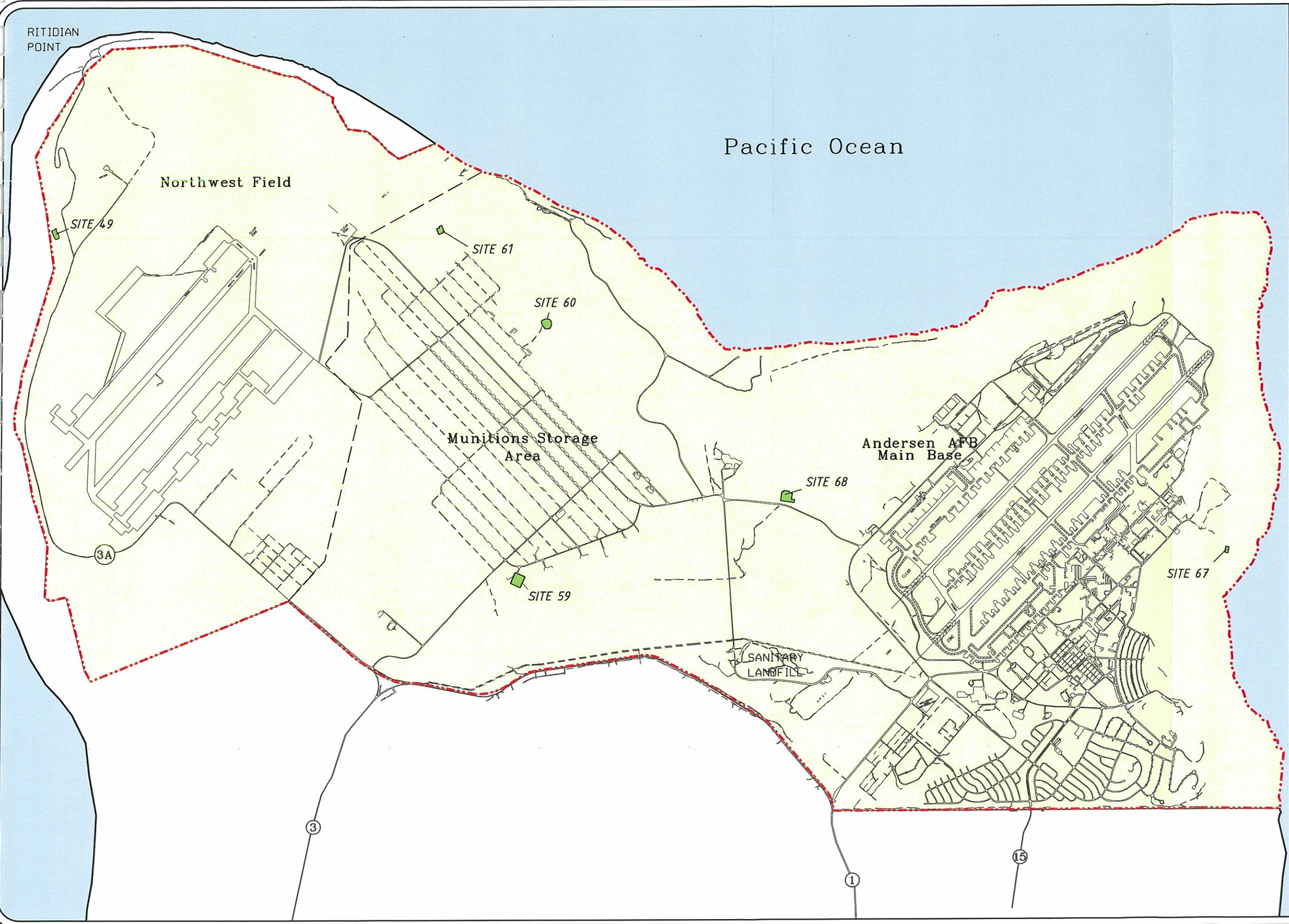
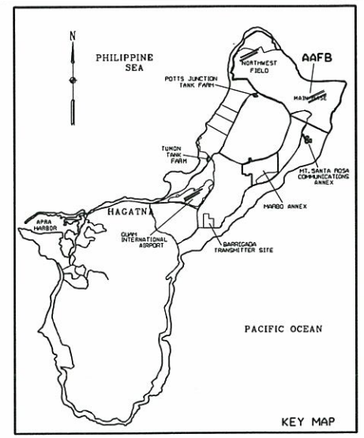


Figure 2-2. Location Map of Sites 45 and 69, Tumon Tank Farm, Andersen AFB, Guam.





LEGEND:

EXISTING AIR FORCE PROPERTY LINE

SITE LOCATION

3300′ 0 3300′

GRAPHIC SCALE IN FEET

Figure 2-3.
Location Map of Sites 49, 59, 60, 61, 67, and 68 at Northwest Field and Main Base, Andersen AFB, Guam.

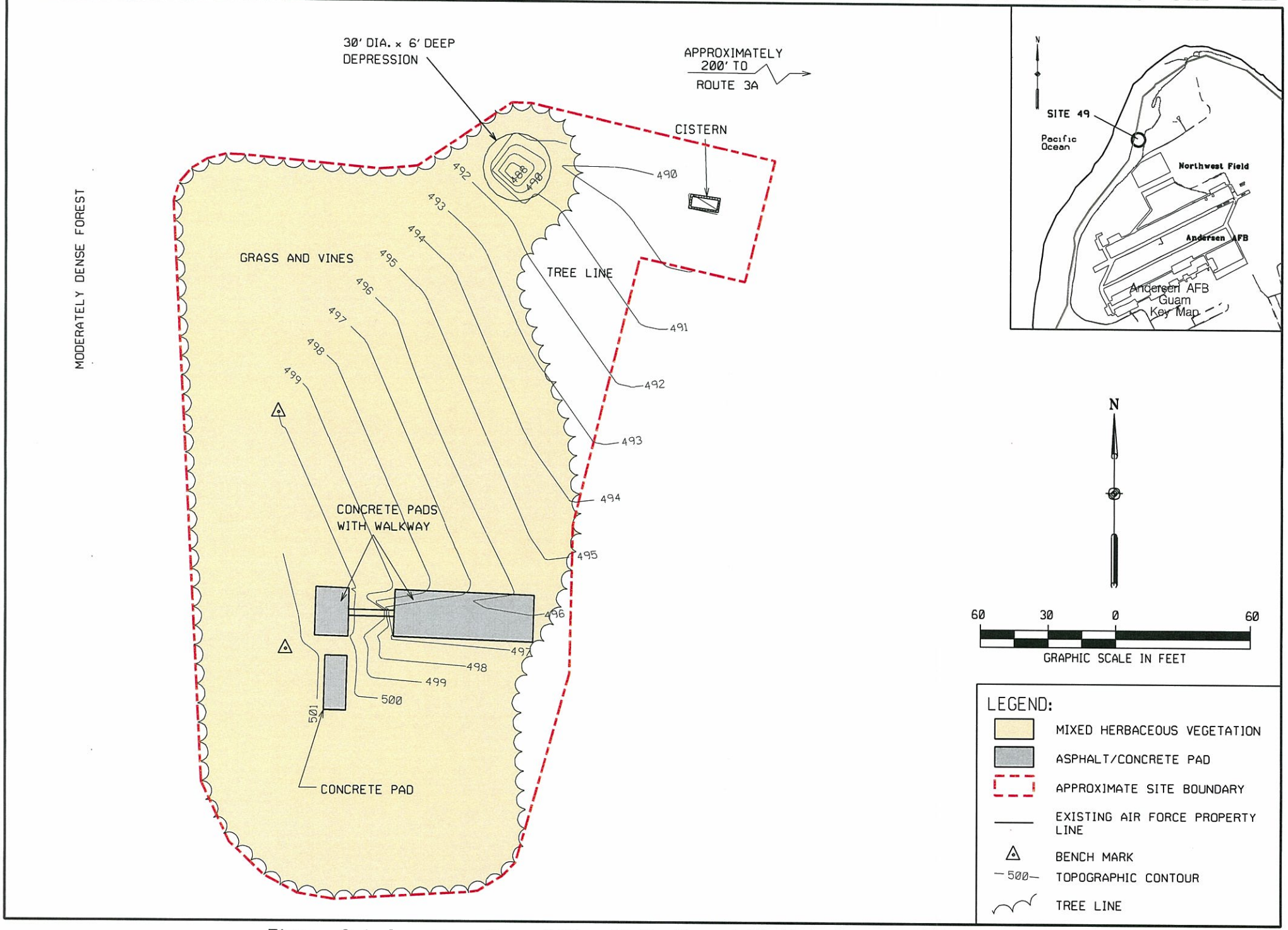


Figure 2-4. Location Map of Site 49, Northwest Field, Andersen AFB, Guam.

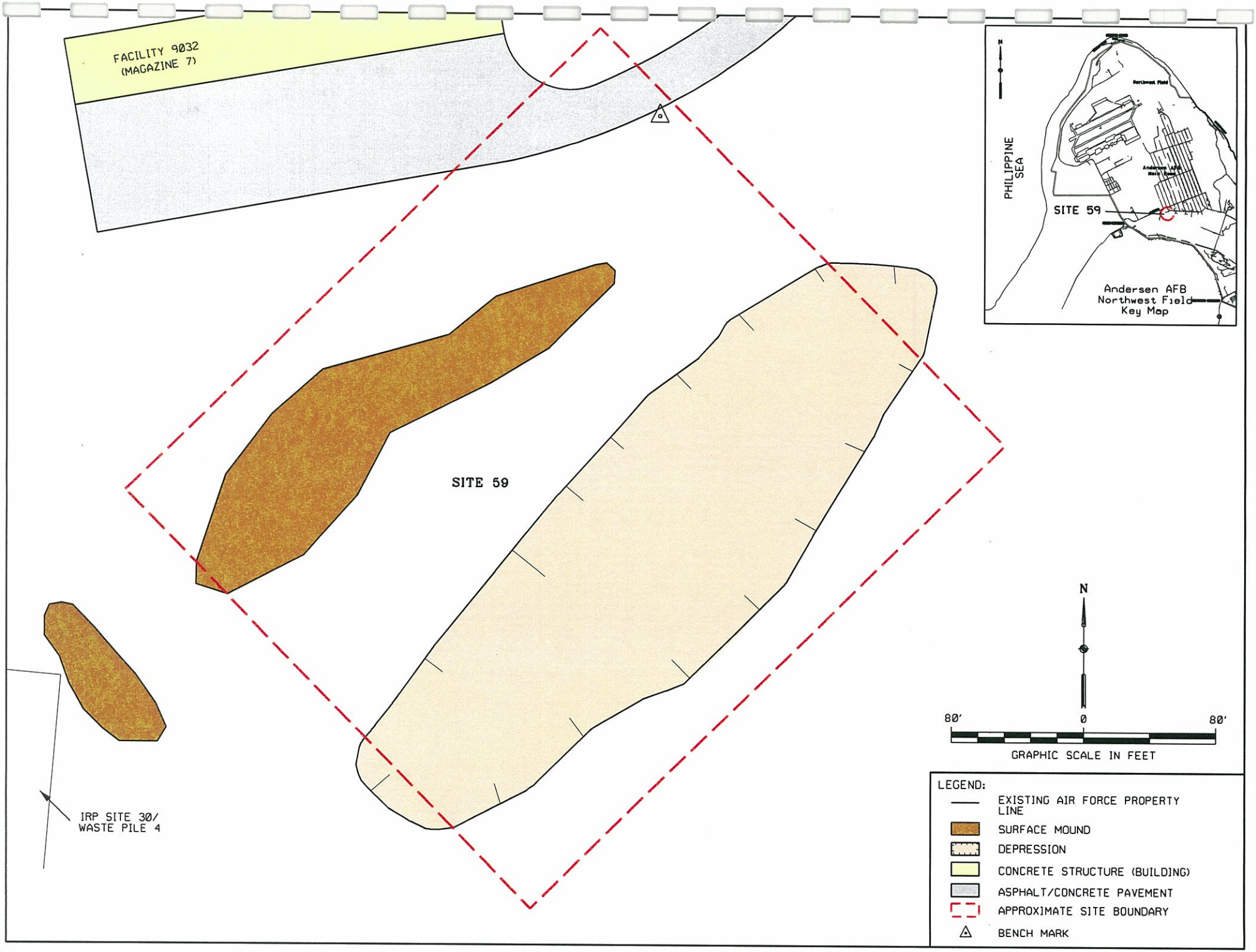


Figure 2-5. Location Map of Site 59, Munitions Storage Area, Andersen AFB, Guam.

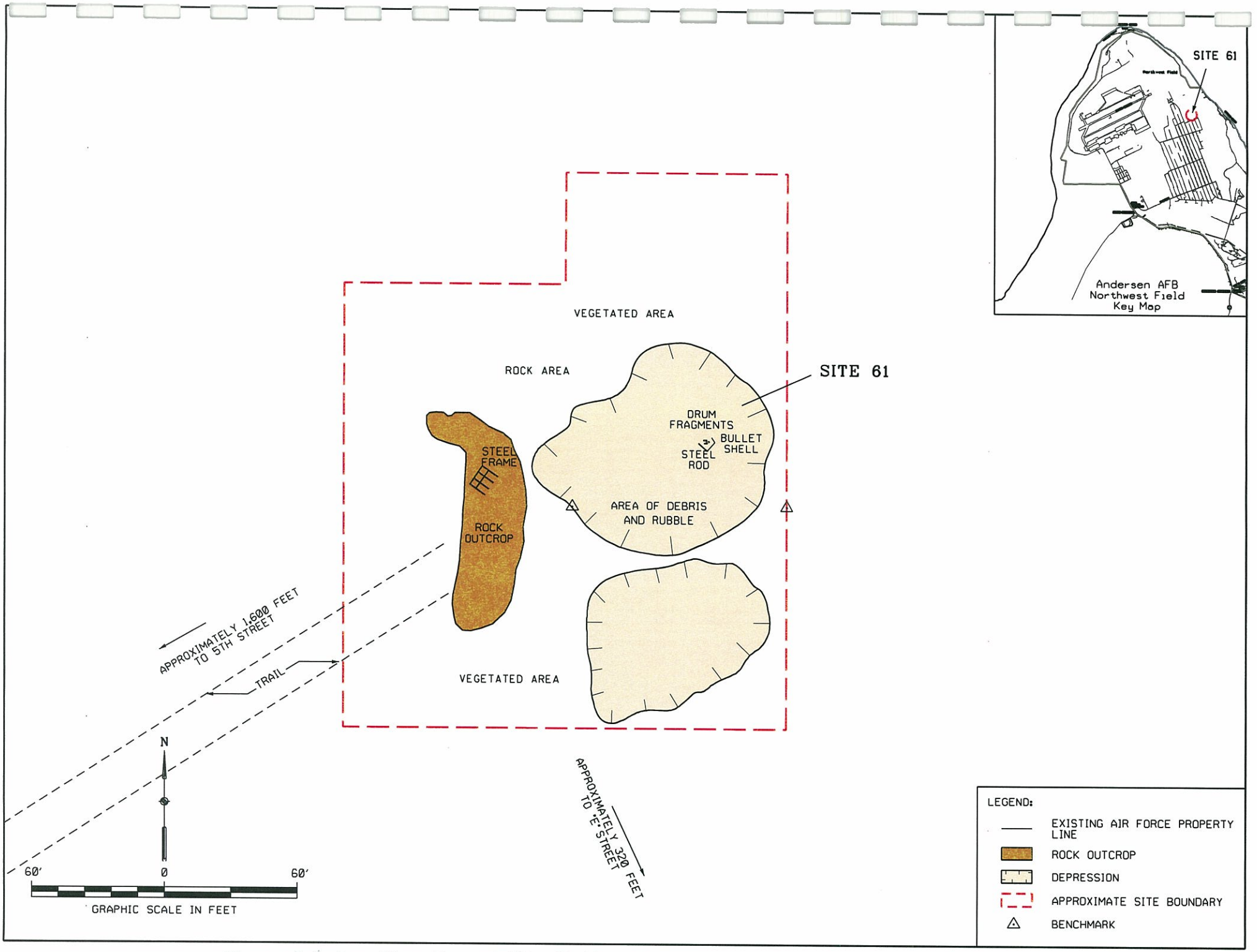


Figure 2-6. Location Map of Site 61, Munitions Storage Area, Andersen AFB, Guam.

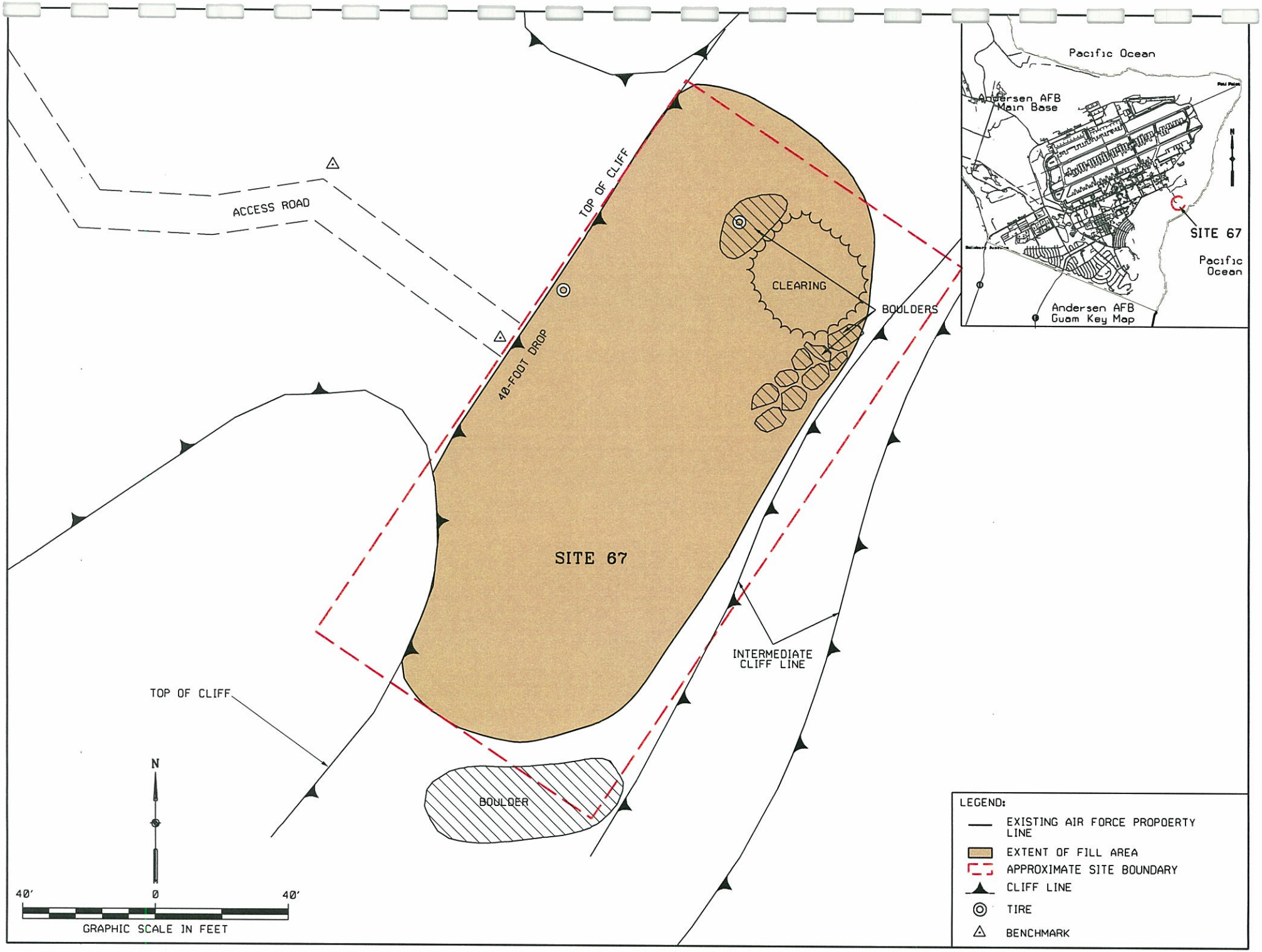


Figure 2-7. Location Map of Site 67, Main Base, Andersen AFB, Guam.

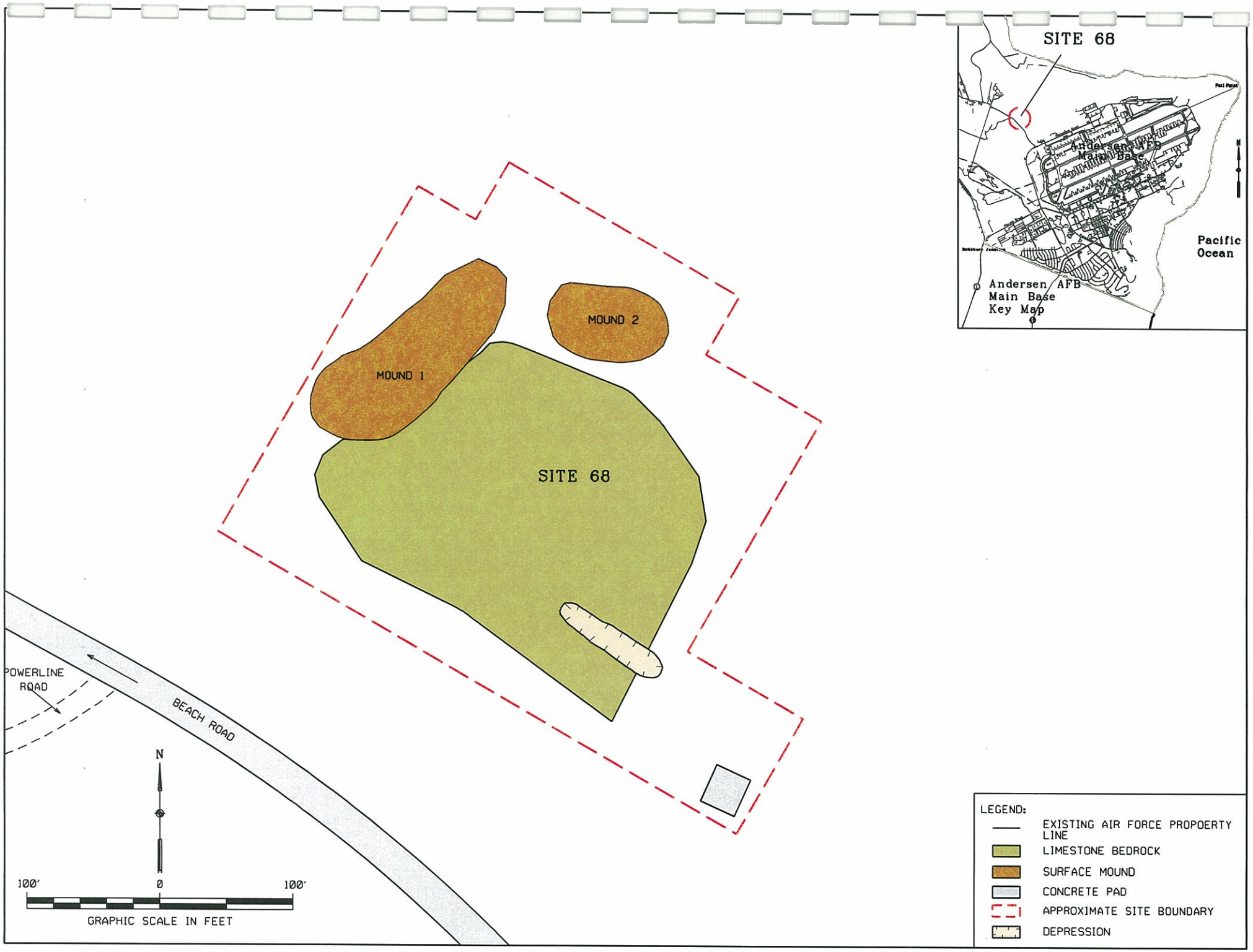


Figure 2-8. Location Map of Site 68, Main Base, Andersen AFB, Guam.

3.0 Responsiveness Summary

This section provides a summary of the public comments regarding the Proposed Plan for remedial action at Sites 45, 49, 59, 61, 67, 68, and 69 at Andersen AFB, Guam. At the time of the public review period, the USN had determined that no CERCLA remedial action is necessary at Sites 45, 49, 59, 61, 67, 68, and 69. Based upon the verbal comments received, the Proposed Plan was accepted by the public.

3.1 Stakeholder Comments and Lead Agency Responses

A public meeting was held on 14 August 2008, at the Guam Marriott Hotel in Tumon, Guam. The meeting officially began at 6:56 PM and concluded at 8:20 PM, according to the transcript. The meeting was attended by 14 members of the community which included seven members of the Andersen AFB Restoration Advisory Board. Mr. Gregg Ikehara, Andersen AFB 36 Civil Engineer Squadron/Civil Engineer Environmental Flight (36th CES/CEVR), provided an opening statement. Mr. Danny Agar (36th CES/CEVR Remedial Project Manager) gave a PowerPoint presentation discussing the proposed plan for four separate groups of IRP sites. Each presentation provided a brief site history, summary of past investigative studies and related analytical results, and when applicable a summary of the human health and ecological risk assessments. The preferred remedial alternative at each IRP site was also presented.

After the presentation, six members of the community spoke. The questions and comments were primarily for clarification or looking for additional information rather than questions or comments on the preferred remedial alternative. Most questions were answered at the meeting. A brief summary of individual questions and comments are included on the following pages. Questions and comments after the presentation covered all four proposed plans, however, only questions specific to aspects of IRP Sites included in this ROD are presented in the responsiveness summary below. The complete transcript is available in the AR file for Andersen AFB, which is available for public review at the Robert F. Kennedy Library at the University of Guam and the Nieves M. Flores Memorial Library in Hagåtña.

General

Mr. Gawel asked what the steps are following the deadline and receipt of comments, and what date would be posed for the Record of Decision. Mr. Ikehara stated that under the current process, mandated by CERCLA, comments are solicited for 30 days. The comments received are incorporated into the Records of Decision, which follows after the proposed plan stage. The Record of Decision is the legal decision document that dictates what the future situation or the future condition of that site will be. It takes approximately six months to generate a responsiveness summary, as well as the legal basis for the Record of Decision.

Mr. Quitugua asked, in reference to the no action alternative, if any action could be taken at the site, and if the decisions that are made in the Records of Decisions could change. Mr. Ikehara explained that if the preferred remedial alternative is no action, then nothing will be done. He explained that the decisions were not made by the Air Force alone. It is done in a tripartite agreement called the Federal Facility Agreement, which is basically a roadmap to the cleanup of all the identified CERCLA sites. If there is a change in the record of decision phase, it would

need to be worked extensively and discussed at the remedial project managers' level to determine what would be a better course of action other than no further response.

Mr. Kasperbauer asked how it was decided to investigate these particular sites and not some of the others. Mr. Ikehara explained that part of it is funding eligibility issues. The Air Force has determined that if certain sites have been used after 1984, the eligibility has been exceeded for use of our environmental restoration account money. That is the cutoff date that the Air Force has selected as a result of CERCLA, or actually in this particular case, it's a super fund amendment which was in 1984. The sites were identified as part of the records search and part of the preliminary assessment and site inspection that was done early on to determine which sites were really sites that required further evaluation, further sampling, and the extensive CERCLA steps that need to be followed to get to a cleanup action or determination that a cleanup is not required because there is no risk.

Mr. Jocson asked for clarification between these types of sites versus what qualifies as a FUDS site. Mr. Ikehara explained that the FUDS are the Formerly Used Defense Sites. It is a program that's run by the Corps of Engineers. The Air Force is not responsible for FUDS. They are responsible for sites within the Air Force footprint, and those are the sites that are being addressed under the restoration program.

Mr. Kasperbauer asked if the public can anticipate future military activity at these sites versus the sites that have not been investigated. Lt. Colonel Mathews explained that the Air Force looks at historical use and identifies the areas of concern that need to be cleaned up under CERCLA. Future use or plan was not an issue. The issue was to be a good steward and clean the areas up under the law. The Air Force looks at which areas have high risk potential that need to be cleaned up, and investigates those areas to see if there are contaminants out there, and if there are, they plan on cleaning it up. –For some of these areas there is no planned future use, it may just sit in its current state after it is cleaned up. Mr. Ikehara added that future land use is a consideration when investigating the sites. If the site is planned for residences, certain criteria have to be met. The most conservative use of the property would be future resident child. So it does play in to how we screen and how we determine the appropriate level of cleanup at these sites.

Mr. Kasperbauer asked if the historical information included interviews with area residents and what it means when the document states that no historical information is found. Mr. Agar stated that during the preliminary investigation a records search was done that was the basis of the historical information. Mr. Ikehara added that the Air Force tries to get interviews with various workers and people that worked in those areas, to add to the understanding of what sort of land use occurred. The Air Force tries to obtain as much personal information about what may have occurred at the sites as possible.

Site 45

No specific comments received for this site.

Site 49

Ms. Brown and Mr. Kasperbauer asked for clarification on the term plantation. Mr. Agar stated that the area was found to be or at least identified as an area for planting.

Site 59

No specific comments received for this site.

Site 61

No specific comments received for this site.

Site 67

No specific comments received for this site.

Site 68

No specific comments received for this site.

Site 69

Mr. Kasperbauer asked for clarification on what area was designated for industrial use and if it would only be used for industrial purposes. Mr. Agar informed him that it was the Tumon Tank Farm area behind the hotel. Mr. Agar stated that it was a reference to the previous use of the area; it was an industrial area and that when the area was evaluated, the Air Force was looking for contaminants at the site. Petroleum hydrocarbons were found at the site which exceeded the USEPA cleanup levels for the particular constituents. However, when the Air Force did evaluations for human health risks, there were no risks at all to future residents or the environment. So therefore, the site doesn't necessarily have to be industrial. It can be deemed cleaned. Mr. Agar also stated that the tanks on the site had already been removed.

Ms. Brown inquired whether or not any type of cleanup activity had been put in place at the time the tanks were taken out and if CERCLA activities occurred at the time. Mr. Agar stated that the only activities were the removal of the tanks itself and the associated pipings. Mr. Agar added that yes, as far has he knows, CERCLA activities occurred at that time.

Ms. Brown asked what the Air Force plans on doing with the property, if they are planning on building a recreational hotel for military personnel. Mr. Ikehara stated that the idea had been suggested because of the site's prime location.

3.2 Technical and Legal Issues

No technical or legal issues were identified during the public review period of the Proposed Plan.

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4.0 References

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Young, F.J., 1988. *1988 Soil Survey of Territory of Guam.* United States Department of Agriculture, Soil Conservation Service, in Cooperation with Guam Department of Commerce and University of Guam. May.

APPENDIX A

NOTICE OF PUBLIC MEETING

ANDERSEN AFB
INSTALLATION RESTORATION PROGRAM
PUBLIC MEETING

A public meeting to present the Final Proposed Plan for Remedial Alternatives at Installation Restoration Sites 44, 45, 46, 47, 48, 49, 50, 51, 53, 55-A, 56, 58, 59, 61, 67, 68, 69, 70, and 73 will be held on Thursday, August 14, 2008 at 6:30 p.m. at the Guam Marriott Resort & Spa, Lobby Level, The View, Tumon Guam.

Documents are available for public viewing at Nieves M. Flores Memorial Library, Hagatna, Guam and Robert F. Kennedy Memorial Library, Mangilao, Guam.

For questions regarding the Proposed Plans, please call the Remedial Project Manager, Mr. Gregg Ikehara at 366-4692.

NOTICE OF AVAILABILITY

Andersen Air Force Base Installation Restoration Program has prepared four Proposed Plans for Remedial Alternatives for Sites within the Site Wide Operable Unit. The Sites addressed in the four Proposed Plans are presented in the following groups:

1) **Sites 47, 50, 51, 53, and 55-A** - ***Remedial Action is Required***
2) **Sites 45, 49, 59, 61, 67, 68, and 69** - ***No Action is Required***
3) **Sites 48, 56, 58, 70, and 73** - ***No Action is Required***
4) **Sites 44 and 46** - ***No Action is Required***

The Proposed Plans describe the remedies considered for these Sites and evaluate the potential risks posed to human and ecological receptors, and establish a risk-based cleanup standard. The preferred remedies presented in the plans include remedial action (soil removal) and no action. Additional remedies considered in the evaluation process included institutional controls. The final remedy will be selected after public comments are received.

The Proposed Plans are available for public review at the Nieves M. Flores and Robert F. Kennedy Memorial Libraries. The 30-day public comment period for the Proposed Plans will end 31 August 2008. Comments can be mailed to 36 CES/CEVR Unit 14007, APO AP 96543-4007 and must be postmarked on or before 31 August 2008.

For questions regarding the Proposed Plans, please call the Remedial Project Manager, Mr. Gregg Ikehara at 366-4692.

Federer advances

MASON, Ohio (AP) — Roger Federer shook off last week's early-round loss in Toronto and beat Robby Ginepri 6-7 (2), 7-6 (5), 6-0 Tuesday in his first match at the Cincinnati Masters.

Andy Roddick wasn't so fortunate. He withdrew just before his match with Philipp Kohlschreiber was to begin, citing neck and shoulder pain.

Woong-Sun Jun of Korea took his place and was dispatched by Kohlschreiber 6-2, 6-2.

APPENDIX B

FEDERAL FACILITY AGREEMENT

CHANGE LETTERS

DEPARTMENT OF THE NAVY
COMMANDER, JOINT REGION MARIANAS
PSC 455, BOX 152
FPO AP 96540-1000

IN REPLY REFER TO:
9510
Ser J4/1235
November 23, 2009

Mr. Mark Ripperda
US Environmental Protection Agency
75 Hawthorne St. H-9-4
San Francisco, CA 94105-3901

Dear Mr. Ripperda,

SUBJECT: NOTIFICATION OF TRANSFER OF ENVIRONMENTAL RESTORATION PROGRAM RESPONSIBILITY

This letter serves as notification that all Environmental Restoration Program responsibilities for Andersen Air Force Base (AAFB), a property listed on the National Priorities List, will be officially transferred to the United States Navy under the Commander, Joint Region Marianas (CJRM), effective October 1, 2009, pursuant to chapter 2.17 of the April 2008 Department of Defense Environmental Supplemental Guidance (EVSG) for Implementing and Operating a Joint Base. This action is being taken to implement the 2005 Defense Base Realignment and Closure (BRAC) Act which requires the transfer of all installation support functions and administrative custody of real property from AAFB to the U.S. Navy.

In accordance with the EVSG, the Navy, as the supporting component, "will assume responsibility for environmental restoration data reporting, budgeting, record keeping, and financial liability" (Ch. 2.17.6), "will assume responsibility for all Restoration Advisory Boards" (Ch. 2.17.8), and will be required to "honor all existing, previously negotiated Federal Facility Agreements in place at the installations to become the Joint Base [Region] at the time of transfer." (Ch. 2.17.5).

If you have any questions, please contact Mr. Richard Raines, P.E., at telephone (671) 339-8420 or at richard.raines@fe.navy.mil.

Sincerely,

P. S. LYNCH
Captain, CEC, U.S. NAVY
Regional Engineer
By direction of the Commander

Copy to:
Guam Environmental Protection Agency
CNIC (N45)
NAVFAC Pacific (EV)
36CES

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS, 36TH WING (PACAF)
UNIT 14007, APO AP 96543-4007

06 November 2009

36 CES/CEVR
Unit 14007
APO AP 96543-4007

Mr. Mark Ripperda
Project Manager
U.S. Environmental Protection Agency
75 Hawthorne St., H-9-4
San Francisco, CA 94105-3901

Dear Mr. Ripperda

This letter provides notice of a change in administrative responsibility pursuant to paragraph 28 of Federal Facility Agreement (FFA) Docket Number 93-117 (FFA).

As you are aware, Andersen Air Force Base is in the process of realigning installation management functions to a newly established Joint Region Marianas pursuant to the 2005 Defense Base Closure and Realignment Commission Final and Approved Recommendations. Title to Andersen Air Force Base real property will remain in the United States and the property will continue to be utilized by the Air Force. As of October 1, 2009, however, administrative custody and responsibility for managing real property assets will transfer from the Air Force to the Navy. The Air Force will become a supported component of the Joint Region Marianas and the Navy will become the supporting component.

In accordance with the April 2008 Department of Defense Environmental Supplemental Guidance for Implementing and Operating a Joint Base, the Navy, as the supporting component, *"will be responsible for all existing and future environmental permits, requirements, plans, and agreements at the installations to become the Joint Base."* (Ch. 1.1.2). As the supporting component, the Navy will be required to *"honor all existing, previously negotiated Federal Facility Agreements in place at the installations to become the Joint Base at the time of transfer."* (Ch. 2.17.5). The Navy is being supplied with an Environmental Condition of Property Report and with access to current environmental files including the FFA. No change to the FFA will be necessary in order for the Navy to assume responsibility for implementation of the FFA and the transfer of responsibility will not change the rights of the parties under the FFA or impede any action under the FFA. The Environmental staff will remain located at Andersen Air Force Base following 01 October 2009 and will be available to assist with any issues related to the FFA. However, the civilian environmental staff will become Navy employees and, likewise, funding responsibility will reside with the Navy.

Please contact Mr. Russell Littlejohn, Environmental Flight Chief, at (671) 366-2556 if you have any questions or concerns or would like to discuss possible changes/addendums to the FFA to further document the substitution of the United States Navy for the United States Air Force as the entity responsible for implementation of the FFA.

Sincerely

GREGG IKEHARA
Chief, Installation Restoration Program

cc:
Ms. Lorilee Crisostomo, GEPA
Mr. Rich Howard, Tech Law Inc.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS, 36TH WING (PACAF)
UNIT 14007, APO AP 96543-4007

06 November 2009

36 CES/CEVR
Unit 14007
APO AP 96543-4007

Ms. Lorilee Crisostomo
Project Manager
Guam Environmental Protection Agency
P.O. Box 22439 GMF
Barrigada, Guam 96921

Dear Ms. Crisostomo

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Sincerely

GREGG IKEHARA
Chief, Installation Restoration Program

cc:
Mr. Mark Ripperda, USEPA
Mr. Rich Howard, Tech Law Inc.